Picture Perfect 4.5 Interface
User Manual

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Contents

Preface

References to Picture Perfect 4.5 for AIX are subject to availability -- currently planned for late 2010.

This manual provides instructions to install Picture Perfect interfaces, the initial setup and configuration for both the interfaces and the Picture Perfect systems, and to configure changes to an existing system. It also contains information for operating the system once it is installed.

The material in this manual has been prepared for persons responsible for, and familiar with the security needs of the customer facility.

Read these instructions and all ancillary documentation entirely <u>before</u> installing or operating this product. The most current versions of this and related documentation may be found on our website. Refer to *Online publication library* on page 26 for instructions on accessing our online publication library.

Note: A qualified service person, complying with all applicable codes, should perform all required hardware installation.

Conventions used in this document

The following conventions are used in this document:

Bold	Menu items and buttons.
Italic	Emphasis of an instruction or point; special terms.
	File names, path names, windows, panes, tabs, fields, variables, and other GUI elements.
	Titles of books and various documents.
Blue italic	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
`Monospace`	Text that displays on the computer screen.
	Programming or coding sequences.

Safety terms and symbols

These terms may appear in this manual:

CAUTION: *Cautions* identify conditions or practices that may result in damage to the equipment or other property.

WARNING: *Warnings* identify conditions or practices that could result in equipment damage or serious personal injury.

Chapter 1 Interface overview

This chapter provides an overview of the different types of interfaces that Picture Perfect supports.

In this chapter:

Introduction

Picture Perfect supports the following types of interface packages:

- Closed Circuit Television (CCTV) systems
- Firepanel systems
- Intrusion Detection systems
- Intercom systems
- Other miscellaneous systems

These interface groups are discussed in detail in subsequent chapters.

CCTV control systems supported by Picture Perfect

All CCTV control systems can exist in stand-alone, subhost, network host and redundant versions of Picture Perfect. Once the CCTV control systems are set up and configured, operation of the CCTV control feature will be a hands-free procedure.

American Dynamics

The interface between the American Dynamics 2150 and Picture Perfect provides the capability to automatically control CCTV cameras.

Burle Allegiant

Models TC8500 to TC8901 are supported. For controllers providing video loss monitoring and reporting using the controller printer port, an optional video loss interface component of Picture Perfect can be configured to issue alarms using the **Alarm Monitor** screen whenever a camera video signal has been lost.

Burle Allplex

Currently, only model TC8298B is supported. This interface supports up to ten Burle Allplex TC8298B controllers on a Picture Perfect host computer.

Grundig

The interface between the Grundig Matrix VAZ300 controller and Picture Perfect provides the capability to automatically control CCTV cameras.

Javelin

The interface between the Javelin Model JO326HI communication arbitrator and Picture Perfect is bi-directional and provides the capability to automatically control CCTV cameras as well as monitor camera video or sync loss.

Kalatel (also known as GE analog video)

The interface between the Kalatel KTD-312 Computer Interface Unit and Picture Perfect provides the capability to automatically control CCTV cameras. The full KTD-312 Computer Interface Unit command set is available to the interface, providing support for camera position and zoom operations.

MAXPRO

The interface between the MAXPRO RD-AT100 MAX1000 controller and Picture Perfect provides the capability to automatically control CCTV cameras.

Panasonic Proteus

The interface between the Panasonic Proteus Model 500 controller and Picture Perfect provides the capability to automatically control CCTV cameras. The Picture Perfect system will communicate with a bridge PC running a Windows program called PFW (Proteus For Windows).

Panasonic 550

The interface between Panasonic 550 WJ-SX550A controller and Picture Perfect provides the capability to automatically control CCTV cameras.

Pelco

The interface between the Pelco CM9750 CCTV switcher and Picture Perfect provides the capability to automatically control CCTV cameras.

Vicon Viper

The interface between a Viper VPS13xx (VPS1300 or VPS1344) controller and Picture Perfect provides the capability to automatically control CCTV cameras.

Firepanel systems supported by Picture Perfect

All firepanel systems can exist in a Picture Perfect stand-alone, redundant (two Picture Perfect hosts have connectivity to a single system receiver port by means of a splitter), or enterprise environment, which generate Picture Perfect alarms when an alarm is tripped or reset. Communication is uni-directional using a serial line connection, meaning the Picture Perfect interface only receives data from the interface, and does not send data back.

EST

The EST interface to Picture Perfect acts as a secondary monitoring system for the EST panel and recognizes only the predefined message types built into the interface and set up through Picture Perfect. It acts as a filter that recognizes predefined alarm conditions coming in over the serial line. Once an alarm is detected, the EST interface picks up a unique panel/device ID contained within one of the message lines from the serial port. This unique panel/device ID must have been previously been set up in Picture Perfect. If the panel/device ID was found along with the alarm, an alarm message is sent to be processed by Picture Perfect. Further information should be obtained from the primary monitoring device which is the EST panel.

Firesine

The Firesine System interface to Picture Perfect acts as a secondary monitoring system for the Firesine System and recognizes only the predefined message types built into the interface and set up through Picture Perfect. It acts as a filter that recognizes predefined alarm conditions coming in over the serial line. Once an alarm is detected, the Firesine interface extracts the ID for the specific type of message - **`F<id>`** (Fire), **`A<id>`** (Alert/ Pre-Alarm), **`D<id>`** (Fault Detected), **`R`** (system reset message - we use the configured message from the **`firesine`** configuration file). The ID or reset message must have been previously set up in Picture Perfect. If it was, the associated alarm/reset is generated. Time/Date, Zonal, and General Fault messages are ignored. Further information should be obtained from the primary monitoring device, that is the Firesine panel.

Notifier

This interface acts as a secondary monitoring system for the Notifier AFP400, AFP1010, and AM2020 firepanel and recognizes only the predefined messages built into the interface and set up through Picture Perfect. It may be used to monitor messages from the Notifier panel. For detector and module monitoring, the information displayed in the **Alarm Monitor** will show the device type, status, loop and detector/module number and a user defined description field. Further message information should be obtained from the primary monitoring device which is the Notifier panel and associated printer. This interface can monitor system type messages coming from the Notifier panel which do not have an associated device type.

Simplex

The Simplex interface to Picture Perfect acts as a secondary monitoring system for the Simplex 4100 fire alarm system, and only recognizes the specific fire, and life-safety alarms and resets the interface was developed to handle.

Intrusion detection systems supported by Picture Perfect

The intrusion detection interface for Picture Perfect receives alarm input from the intrusion system and recognizes predefined message types built into the interface that are set up through Picture Perfect. These messages are mapped to the Picture Perfect database enabling annunciation of the intrusion event.

DMP SCS

The DMP SCS-1 interface to Picture Perfect acts as a secondary monitoring system for the DMP SCS-1 alarm central receiver and recognizes predefined message types built into the interface and set up through Picture Perfect. Messages or alarms recognized by the DMP SCS-1 interface are looked up in the Picture Perfect database. For messages NOT in the Picture Perfect database, a dynamic entry will be created in the input group and alarm database tables. This system can exist in a stand-alone, redundant, or enterprise environment.

Universal Intrusion

The Universal Intrusion interface acts as a secondary monitoring system for external devices that send data in a specific configurable format to the interface. It is a serial line interface, designed to annunciate alarms and their resets that have been entered into the Picture Perfect database, to the Picture Perfect **Alarm Monitor**. This interface supports operations in a stand-alone, redundant, or enterprise environment.

Intercom systems supported by Picture Perfect

The Picture Perfect intercom interfaces can exist in stand-alone, redundant (two Picture Perfect hosts have connectivity to a single intercom system port by means of a splitter), and enterprise environments. An instance of an intercom interface has a one-to-one correspondence between Picture Perfect and the serial line port connecting it to the intercom hardware. The interface will generate alarms when user configurable message traffic control messages are received. Communication is uni-directional (unless otherwise indicated) using a serial line connection, meaning the Picture Perfect interface only receives data from the interface, and does not send anything back.

AlphaCom

The interface between the Stentofon AlphaCom Exchange and Picture Perfect, provides the capability to automatically generate AlphaCom alarms in response to Picture Perfect alarms, for Picture Perfect alarms that have been mapped to the AlphaCom alarms. The AlphaCom Exchange alarm will initiate an action, such as a pre-recorded audio message. The interface between the Stentofon Alphacom Exchange and Picture Perfect is bi-directional, with the option to configure the AlphaCom interface to resend messages if communication is lost.

Commend

The Commend interface to Picture Perfect acts as a secondary monitoring system for the Commend Intercom System, and recognizes only the pre-defined intercom message types built into the interface, and set up through Picture Perfect. The data transfer is uni-directional from the Commend Intercom System to the interface on the Picture Perfect host, across a serial line connection, with XON/XOFF enabled. ACK/NAKs will also be transmitted between the systems. No handshaking is required for the interface.

Stentofon/Stentofon_MCH

The Stentofon interface to Picture Perfect acts as a secondary monitoring system for the Stentofon Touchline Intercom System Exchange Models 52/8 and 120/12, and recognizes only the predefined intercom messages built into the interface and set up through Picture Perfect. The data transfer is uni-directional from the Stentofon Intercom System to the interface on the Picture Perfect host, across a serial line connection. An additional Stentofon interface (the Stentofon_MCH), that is designed to support Stentofon Intercom systems with multiple call handlers (a firmware enhancement), and to provide paging station monitoring on an individual call handler basis.

Stentofon 9600

The Stentofon 9600 interface to Picture Perfect acts as a secondary monitoring system for the Stentofon P-9600 intercom system and recognizes only the predefined intercom message types built into the interface and set up through Picture Perfect. The data transfer is uni-directional from the Stentofon P-9600 intercom system to the interface on the Picture Perfect host, across a serial line connection.

Miscellaneous systems supported by Picture Perfect

These systems can exist in stand-alone, subhost, network host and redundant versions of Picture Perfect as noted.

Central Station

This interface provides a communication mechanism between Picture Perfect and central monitoring systems that allow control of activities for multiple systems and both local and remote sites from a single location. The central station software can process alarms from the Picture Perfect system. This allows a Central Station operator to work from one screen and process alarms from both the Picture Perfect Access Control System and from their intrusion detection system. The communication is two way using a serial line connection and is available for stand-alone systems.

Siebe CBAS

The Siebe Environmental Control's Facility Integrator (CBAS) interface to Picture Perfect acts as a secondary monitoring system for the Facility Integrator and recognizes only "alarm" and "dismissed" message types sent from the Facility Integrator. All other messages are ignored. The Facility Integrator computer is a PC-based platform. Communication with the Picture Perfect host is using a serial line connection using the PC's serial port. The communication is unidirectional, meaning the interface only receives data from the Facility Integrator and does not send anything back. This interface is available for standalone or redundant systems.

Remote Alarm Notification

The Picture Perfect Remote Alarm Notification (RAN) package, enables alarms from the Picture Perfect system to be routed to a remote (non-Picture Perfect) system. The alarms can then be processed by and responded to, from the remote system. Both systems use the TCP/IP protocol to communicate with each other. This method of communication guarantees accurate transmission of all data and instant notification of a system that is no longer connected to the network. The RAN interface is available for standalone, enterprise, or redundant systems.

OH Receiver

The OH Receiver interface to Picture Perfect acts as a secondary monitoring system for the NX-8E, Ademco, or Radionix panel and recognizes predefined message types built into the interface and set up through Picture Perfect. The data transfer is uni-directional from the OH Receiver System (Network or Dial-up) to the interface on the Picture Perfect host, across a serial line connection. The OH Receiver interface is available for standalone, enterprise, or redundant systems.

Chapter 2 Installing and removing

This chapter provides information on installing or removing Picture Perfect interfaces on a standalone, enterprises, or a redundant system.

In this chapter:

Overview

An interface package can be installed at the same time the Picture Perfect system is installed or any time later. If installing an interface at the same time that the Picture Perfect `base` system is being installed, follow the `base` installation instructions in the Picture Perfect 4.5 Installation Manual to install the `base` package and then refer to this document for interface installation.

For redundant configurations, you must install the Picture Perfect Redundant System (`pprs`) package before installing the interface software.

Prior to installation, you should configure the port on the interface device (for example: CCTV switcher, receiver panel) by which the device will send/receive data to/from Picture Perfect. The following port settings should be configured:

- Baud rate
- Parity
- Character size
- Stop bits
- Xon/xoff control

Refer to the specific manufacturer's documentation for more information.

Installation of an interface for Picture Perfect involves these basic steps:

1. Defining a port.
2. Installing the Picture Perfect `base` software, if necessary.
3. Installing the Picture Perfect Redundant System `(pprs)` software, if necessary. If it is necessary to install the `pprs` software, it should be installed and configured on the primary and backup systems prior to the interface installation.
4. Installing the Picture Perfect interface software.

These steps are described in this chapter, using a Kalatel CCTV interface as an example. Because each interface differs slightly, please observe the screen prompts during the installation and answer the questions appropriately.

Defining a port

Linux

When you install the software driver for the Digi board, the serial ports will automatically become available. Refer to your *Picture Perfect 4.5 Installation Manual* for information about adding Digi board drivers.

Note: Once the serial port is available, do not define the port in the Picture Perfect Devices, Ports window.

AIX

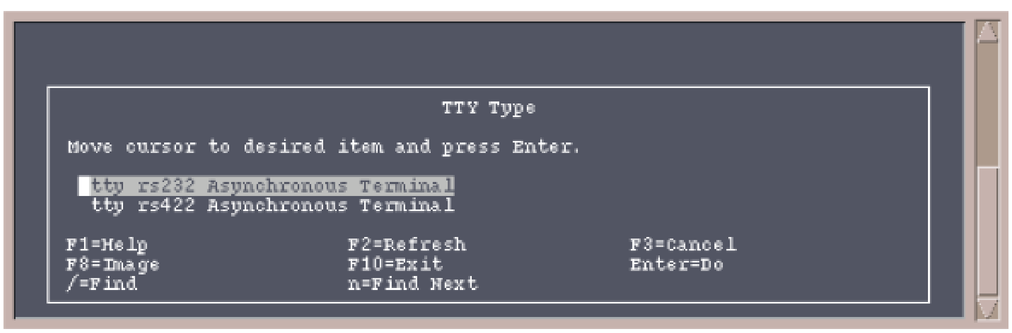
The Picture Perfect serial ports used to communicate with the interface system will be configured and reserved using the IBM AIX System Management Interface Tool (SMIT) utility from the system console. In addition, the serial port baud rate, connection, and physical location of the port are configured using the SMIT utility. Once the serial port has been configured using the SMIT utility, it will be recognized by Picture Perfect during the interface software package installation.

Follow the directions below to configure the ports:

1. Log in as `root` and open a terminal window.
2. Type: `smit maktty` Enter

   The SMIT utility will load and a list of TTY types will display. Refer to *Figure 1*.

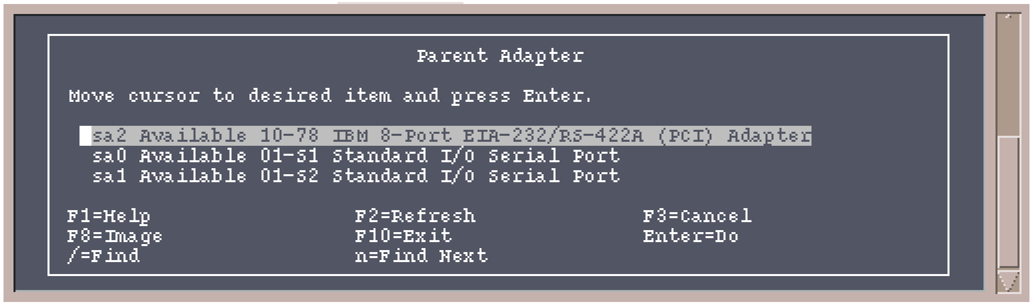
Figure 1. TTY type screen



3. Select the TTY: `tty rs232 Asynchronous Terminal` Enter

   A list of parent adapters for each available serial port will be displayed. An example is shown in *Figure 2: Parent adapter screen on page 12*.

Figure 2. *Parent adapter screen*

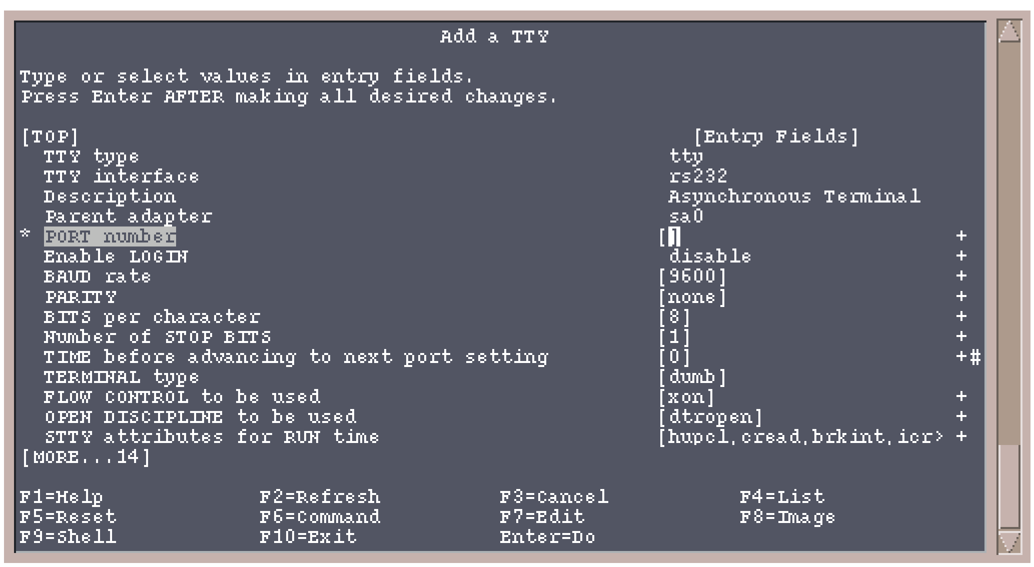


4. Determine where the interface line will be connected to the RISC System/6000. At least one of the two standard serial ports is used by the support modem (sa1). The other standard serial port (sa0) is used by the console, if it is an ASCII terminal. If a graphical console is present, one of the serial ports may also be used for the interface, if available.

   The interface line will be connected to a multiport adapter, which must be installed and connected to the RISC System/6000 in order to appear on this list. Since your system may have one or more multiport adapters (sa2, sa3, sa4, etc.), select the one you will be using for this communication line.

5. Select the parent adapter and press Enter. *Figure 3* displays next.

Figure 3. *Add a TTY screen*



6. Move the cursor to the PORT Number field.
   a. Press F4 to display the list of ports. The ports are numbered sequentially and should be labeled on the RS-232 connector.
   b. Highlight the port to which the interface line will be connected.
   c. Press Enter and the port you selected should be displayed in the PORT Number field.

7. Verify the parameters have the values you configured on the interface device's port, for example:
   - `BAUD rate` `1200`
   - `PARITY` `none`
   - `BITS per character` `8`
   - `Number of STOP BITS` `1`
   - `XON-XOFF (FLOW CONTROL)` `none`

   If the parameters are not correct, move the cursor by using the up and down arrow keys and change the entry by typing over the existing value.
8. Move to the field STTY attributes for RUN time.
   a. Delete the default entry.
   b. Replace with: `cread,clocal`
   c. Press Enter.
9. Move to the field STTY attributes for LOGIN.
   a. Delete the default entry.
   b. Replace with: `cread,clocal`
   c. Press Enter.
   d. Note the tty number assigned.
10. If multiple interfaces will be configured, or you intend to use video loss monitoring and alarm reporting capability, repeat step 6 through step 9 as necessary for the additional ports.
11. Press F10 to exit the SMIT utility and complete the procedure.

Installing Picture Perfect base software

If you have not yet installed the Picture Perfect `base` software, refer to the *Picture Perfect 4.5 Installation Manual* for information about installing Picture Perfect `base`.

If you have previously installed the Picture Perfect `base` software, continue with the next section.

Installing on a Redundant system

For redundant configurations, you must install the Picture Perfect Redundant System `(pprs)` package before installing the interface software.

If you have not yet installed the `pprs` software, refer to the *Picture Perfect 4.5 Redundant Edition User Manual* for more information about installing the `pprs` package.

If you have previously installed the `pprs` software, continue with the next section.

Installing the interface software

Before proceeding with the installation:

- You will need the port name (defined in the section *Defining a port* on page 11) and the baud rate.
- You must stop the Picture Perfect application prior to installation. If running in a redundant environment, Picture Perfect on the redundant (backup) host must also be stopped prior to package installation. If Picture Perfect is not stopped, the interface will not start until the next restart of Picture Perfect.

Follow these steps to install the interface software:

1. Log on as `ppadmin` and open a terminal window.
2. Type the following to shut down Picture Perfect:

   ```
   . /cas/bin/profile Enter
   rc.pperf -k Enter
   ```

3. Switch users to `root` by typing the following command.

   ```
   su - Enter
   ```

   Enter your root password, and then press Enter.
4. Insert the Picture Perfect v4.5 Installation DVD into your server. Wait for the DVD ROM LED to stop blinking before proceeding.

   Linux
5. Unmount the DVD by typing the following command:

   ```
   umount /media/pp45 Enter
   ```

6. Mount the DVD by typing the following command:

   Linux

   ```
   mount /dev/dvd /media Enter
   ```

   AIX

   ```
   mount -v cdrfs -r /dev/cd0 /mnt Enter
   ```

7. Change to the root directory by typing `cd /` Enter.
8. To display a list of installation options, type:

   Linux

   ```
   /media/Linux/INSTALL -i Enter
   ```

   AIX

   ```
   /mnt/AIX/INSTALL -i Enter
   ```

   You will receive messages similar to those shown below, followed by a list of packages:

```
--------------------------------------------------------------------------------
         Picture Perfect CD-ROM Installation - 4.5 04/10/09
            Copyright (C) 1989-2009 GE Security, Inc.
--------------------------------------------------------------------------------


The following Interface product(s) are available:

Prod #  Name and Descriptions
------  ---------------------
0       allegiant     Burle Allegiant CCTV Interface
1       allplex       Burle Allplex CCTV Interface
2       alphacom      Stentofon AlphaCom Intercom Interface
3       amdyn         American Dynamics CCTV Interface
4       cbas          Siebe Environmental Control Interface
5       commend       Commend Intercom Interface
6       cstation      Central Station Interface
7       est           EST Fire Alarm Interface
8       firesine      Firesine Fire Alarm Interface
9       grundig       Grundig VAZ300 CCTV Interface
10      javelin       Javelin J0326HI CCTV Interface
11      kalatel       Kalatel KTD-312 CCTV Interface
12      maxpro        Maxpro MAX1000 CCTV Interface
13      notifier      Notifier Fire Alarm Interface
14      oh_receiver   Osbourne-Hoffman Receiver Interface
15      panasonic     Panasonic Proteus 500 PFW Interface
16      panasonic550  Panasonic WJ-SX550A Interface
17      panasonic650  Panasonic WJ-SX650A Interface
18      pelco         Pelco CM9750 CCTV Interface
19      pelcob        New Pelco CM9750 CCTV Interface
20      ran           Remote Alarm Notification System
21      scs           DMP SCS-1 Alarm Interface
22      simplex       Simplex System Interface
23      stentofon     Stentofon TouchLine Intercom Interface
24      stentofon9600 Stentofon P-9600 Intercom Interface
25      stentofon_mch Stentofon Multiple Call Handler Intercom Interface
26      univ_intr     Universal Intrusion Interface
27      viper         Vicon Viper VPS13xx Interface

Enter product number(s), separated by ',' to select, 'q'  to quit:
```

9. Type the corresponding product number, for example `11`, to install the Kalatel KTD-312 CCTV Interface (`kalatel`) package and press Enter.

   You will be asked to confirm your choice.

```
You have selected the following product(s):
11      kalatel       Kalatel KTD-312 CCTV Interface
```

```
Is this correct (y/n)? [y]
```

10. To confirm, type: `y` Enter.

    You will be asked to confirm the installation.

```
Installing kalatel...
Picture Perfect Multi-package Installation - 4.5 04/10/09
Copyright (C) 1989-2009 GE Security, Inc.

Installing from image in /media/Linux/pp ...

Do you want to install the Picture Perfect KALATEL Package (y/n)? [y]
```

11. To confirm, type: `y` Enter.

    Messages similar to the following will display:

```
Picture Perfect NLS Text Save - 4.5 01/16/06
Copyright (C) 2000-2006  GE Security

Tue Sep 15 08:43:57 EDT 2009
This package has no nls or help files to save...
------------------------------------------------------------------------------
     Picture Perfect KALATEL Package Installation - Version 4.5 04/10/09
             Copyright (C) 1989-2009 GE Security, Inc.
------------------------------------------------------------------------------

Installing this package will configure this server to interface
to KALATEL CCTV system.
Starting the Informix database.. Done
```

Configuring ports

This section describes how to configure the ports and identify the baud rate. The instructions are listed below.

During the installation, the following message displays:

```
Digiboard/port expander check...
The Kalatel Interface requires the use of a serial port.
Do you have a digiboard or port expander attached to the host (y/n)? [y] n
```

1. Press Enter or `y` Enter to indicate that you have a Digiboard or port expander; or press `n` Enter to indicate no Digiboard or port expander is attached.

   If you entered `n`, the following message displays:

```
NOTE: The installation of this interface REQUIRES the usage of a port to continue.
Do you wish to use the comm ports (y/n)? [y]
```

2. Press Enter or y Enter to use the comm ports; or press n Enter to indicate that you will not use the comm ports.

   The installation program will verify if there are ports available on the system. If there are no ports available, a message will display and you will exit the installation program.
   If the check finds a port, the installation will proceed. Messages similar to the following displays:

```
Verifying if serial ports are available for the KALATEL Interface... OK.
Loading KALATEL CCTV Server Package...
Extracting files...from media
The files have been read from the media.

Please select a tty port:
```

3. Select the port to be used for the interface server package from the list provided.

   A message similar to the following displays:

```
You must select a tty port for the KALATEL interface.
The following tty ports are available:
```

Linux

A list similar to the following displays:

```
/dev/ttyS1
/dev/ttyS2
/dev/ttyS3
```

AIX

For RS/6000: The port name created previously using the SMIT utility appears in a list similar to the following:

```
/dev/tty10
/dev/tty11
/dev/tty12
```

The following prompt displays:

```
Please select a tty port:
```

4. Enter a port from the list exactly as it appears, for example:

Linux

For Linux: `/dev/ttyS2` Enter

AIX

For RS/6000: `/dev/tty10` Enter

If you entered a valid tty port from the list, the following message will appear:

```
Please enter the baud rate for the selected port
(1200, 2400, 4800, 9600, 19200): [1200]
```

If you entered a tty port that is not in the list displayed, you will be asked to re-enter the tty port.

5. Enter the baud rate of the interface console port.

The selected baud displays and you will be asked to confirm the setting.

```
Selected baud rate is: 9600
Is this baud rate correct (y/n)? [y]
```

6. Press Enter or `y` Enter to accept; or press `n` Enter to change the number.

If you selected `n`, you will be asked to re-enter the baud rate.
If you selected `y`, messages similar to the following will appear:

```
Setting default Monitor Id to 00
Setting Alarm On function code to '['
Setting Alarm Off function code to '\'

Creating Kalatel Command Strings Table
    /cas/db/text/kalatel_command_strings.table

Creating Kalatel cctv map file /cas/db/text/ktd.map

Installing CCTV SQL Reports...
Loaded report 'CCTV Alarms'.
Loaded report 'CCTV Areas'.
Loaded report 'CCTV Doors'.
Loaded report 'CCTV Hosts'.
Loaded report 'CCTV Inputs'.
Loaded report 'CCTV Micros CommFailure'.
Loaded report 'CCTV Micros Overflow'.
Loaded report 'CCTV Micros ReaderFailure'.
Loaded report 'CCTV Readers'.
```

Installing on a Redundant system

This section describes how to configure a redundant system. The instructions are listed below.

Informational messages followed by a question display to give you the option of installing the interface on a redundant host. The messages will be similar to the following:

```
Updating Picture Perfect backup configuration...
Picture Perfect backup configuration update completed

Is this interface to run in a redundant Picture Perfect environment (y/n)? [n]
```

1. Press `y` Enter to accept the default setting or `n` Enter depending on whether or not the interface is to run in a redundant Picture Perfect environment.

   If you selected `n`, skip to *Configuring additional interfaces* on page 19 as the installation process for this interface is complete.
   If you selected `y`, a message similar to the following will appear:

   ```
   Installation MUST be performed on the primary host. It is assumed that this host --
   'primary1'-- is the primary host. The redundant host name must be different from the
   primary host name.
   Please enter the name of the redundant host:
   ```

2. Enter the name of the redundant host.

   The host name you specified will be displayed and you will be asked to confirm it.

   ```
   Redundant host is: backup1
   Is this correct (y/n)? [y]
   ```

3. Enter `y` Enter to accept; or press `n` Enter to change the redundant host name.

   If you selected `n`, you will be asked to re-enter the redundant host name. If you selected `y`, the following messages will appear:

   ```
   Checking to verify 'backup1' is reachable...
   Updating redundant Picture Perfect backup configuration...
   Picture Perfect backup configuration update completed
   Reflecting the KALATEL.INST installation onto the redundant host backup1...
   ```

Configuring additional interfaces

This section describes how to configure additional interface devices. The instructions are listed below.

The installation of the current copy of the interface is complete, as indicated, and you will be asked if you want to install another copy of the interface. The messages will be similar to the following:

```
The ktd_tty2 installation has completed successfully. Do you wish to configure
another Kalatel CCTV Device
(y/n)? [n]
```

1. Enter `y` to configure another interface device, or `n` (the default value) to complete the installation process.

   If you entered `y`, you will return to *step 3* in the section *Configuring ports* on page 16. Some of the steps will be omitted; for example, you will not be asked if this is a redundant configuration as, either all of the interfaces are running in a redundant environment, or none of the interfaces are redundant. If you entered `n`, you will receive messages similar to the following as the installation process completes:

```
The 'KALATEL.INST' installation has completed successfully.

Checking if need to update nls files...
Picture Perfect NLS Check - 4.5 04/10/09
Copyright (C) 2000-2009 GE Security, Inc.

Tue Sep 15 09:08:17 EDT 2009

No nls files for kalatel package
Running /cas/bin/fixperm on /tmp/kalatel.perm file...
No errors detected
/cas/bin/fixperm finished.

inst_pkgs: Running /cas/bin/interfaces.perm.sh on package kalatel...

Installing desired Interface product(s) was successful.

The Installation has completed.
The system needs to be rebooted for the changes to take effect.

Reboot the system (y/n)? [y]
```

2. Press Enter to reboot the system.

CAUTION: If the interface package was running in a redundant Picture Perfect environment, then you MUST synchronize the database on the backup host with the primary host by performing “Database Recovery” on the backup host prior to starting redundant Picture Perfect on the backup host. Refer to the *Picture Perfect 4.5 Redundant Edition User Manual* for details.

Verifying the installation

This section describes how to verify the installation process. The instructions are listed below.

1. When the system is back up, log in as `root` and verify that the interface is running by typing at the # prompt:

   ```
   ps -ef | grep msan Enter
   ```

   You should get output similar to the following:

   ```
   root 12579 17148 0 10:19:36 pts/0 0:00 msan
   ```

2. For further verification, type at the # prompt:

   ```
   ps -ef | grep ktd_ Enter
   ```

   The output should be similar to the following:

   ```
   root 16164 17148 0 10:19:36 pts/0 0:00 ktd_tty2
   root 16169 17148 0 10:19:37 pts/00:00 ktd_tty3
   ```

The second output line will only appear if more than one device was configured.

If you have performed a redundant installation, you must perform "Database Recovery" on the backup host prior to starting redundant Picture Perfect on the backup host. Refer to the *Picture Perfect 4.5 Redundant Edition User Manual* for details.

Removal

The removal script will automatically detect whether or not you are running in a redundant Picture Perfect environment. If you are running in a redundant environment, additional messages will appear during the removal process.

Note: Picture Perfect must be stopped prior to package removal. If running in a redundant Picture Perfect environment, Picture Perfect on the redundant host must also be stopped prior to package removal.

Follow these steps to remove the Picture Perfect Interface Server package:

1. Log in to the system as `root` and open a terminal window.
2. Type: `cd /` Enter
3. Start the removal program by typing: `ppr` Enter

   Messages similar to the following will appear on the screen:

```
Picture Perfect Package Removal-/custom-pp/bin/ppr 2.0 02/12/03 Copyright (C) 1992-
2003 GE Interlogix, Inc.
WARNING: THIS PROGRAM WILL COMPLETELY REMOVE PICTURE PERFECT PACKAGES AND ANY
DATABASES USED BY THE PACKAGE. SELECTING base OR all WILL REMOVE PICTURE PERFECT
ENTIRELY
ARE YOU SURE YOU WANT TO PROCEED?
(Type 'yes' and press the <Enter> key to proceed)
```

4. To continue, type: `yes` Enter

   If you entered `yes`, a list of the Picture Perfect packages currently installed will be displayed. You will then be asked which package you would like to delete. For example:

```
The following Picture Perfect packages are currently installed:

base
graph
image
impexp
kalatel
Enter the name of the package to remove:
```

5. Type the name of the package you are removing, for example:
   `kalatel` Enter

   Messages similar to the following will be displayed:

```
Removing the kalatel package.
Picture Perfect Kalatel interface package removal - Version 1.2. 7/6/02.
Removing 'tty2' entry for Kalatel interface from the port database table...
Updating Picture Perfect backup configuration...
The Kalatel CCTV Interface package has been completely removed from the system.
Exiting...
```

```
The removal process has completed. Program Exiting.
The system needs to be rebooted for the changes to take effect.
Reboot the system (y/n)? [y]
```

6. Enter `y` (the default value) to reboot the system, or type `n` if you do not want to reboot at this time.

Redundant systems

If the interface package was running in a redundant Picture Perfect environment, then you will also see messages similar to the following:

```
Redundant kalatel interface configuration detected:

This host:          primary1
Other host:         backup1
Redundant kalatel operation is ENABLED.
Map file changes will be reflected on the other host.
Updating Picture Perfect backup configuration...
Removing entry for Kalatel interface from the port database table
Removing redundant Kalatel interface installation from the remote system
'backup1'...
The Kalatel CCTV Interface package has been successfully removed.
The system needs to be rebooted for the changes to take effect.
Reboot the system (y/n)? [y]
```

7. Enter `y` (the default value) to reboot the system, or press `n` if you do not want to reboot at this time.

CAUTION: If the interface package was running in a redundant Picture Perfect environment, then you MUST synchronize the database on the backup host with the primary host by performing "Database Recovery" on the backup host prior to starting redundant Picture Perfect on the backup host. Refer to the Picture Perfect 4.5 Redundant Edition User Manual for details.

Appendix A Configuring an AlphaCom interface

This appendix provides information on configuring the interface between the Stentofon AlphaCom Exchange and Picture Perfect, which provides the capability to automatically generate AlphaCom alarms in response to Picture Perfect alarms.

In this appendix:

Introduction

The interface between the Stentofon AlphaCom Exchange and Picture Perfect, provides the capability to automatically generate AlphaCom alarms in response to Picture Perfect alarms, for Picture Perfect alarms that have been mapped to the AlphaCom alarms. The messages sent to the AlphaCom Exchange, follow the format described in the AlphaCom Data Protocol - System Integration - Implementation 1999-09-30.

The interface between the Stentofon AlphaCom Exchange and Picture Perfect is bi-directional, with the option to configure the AlphaCom interface to resend messages if communication is lost.

The first step is to configure the Picture Perfect system and the AlphaCom Exchange, or to verify the set up if this is an existing system. Next, use the provided `alphacom_map` script to link or "map" the desired Picture Perfect alarms to the appropriate AlphaCom Exchange alarms. When the mapped alarm is received by Picture Perfect, the AlphaCom alarm to which the Picture Perfect alarm is mapped, is sent to the AlphaCom Exchange. No operator intervention is required.

The AlphaCom interface supports the configuration of multiple AlphaCom Exchange devices being connected to the Picture Perfect host, limited by the number of available ports.

Redundant systems

The AlphaCom interface to Picture Perfect supports operations in a redundant Picture Perfect environment where two hosts have connectivity to a single AlphaCom Exchange. Connectivity is achieved by using a splitter between the Picture Perfect system and the AlphaCom Exchange. This allows the physical connection of the AlphaCom Exchange to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the AlphaCom interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host communicates with the AlphaCom Exchange. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are processed but output to the AlphaCom Exchange is suppressed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the AlphaCom Exchange.

Software requirements

The software requirements for the AlphaCom interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Alphacom interface (`alphacom`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Redundant System (`pprs`) package
- Picture Perfect Alphacom interface (`alphacom`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- AlphaCom Exchange System
- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the AlphaCom communication program is started.

- Cable to connect the Picture Perfect system and the AlphaCom. Refer to *Figure 4, Cable pinouts: Picture Perfect system to AlphaCom exchange (DB25F to DB25F)* on page 28.

Figure 4. Cable pinouts: Picture Perfect system to AlphaCom exchange (DB25F to DB25F)

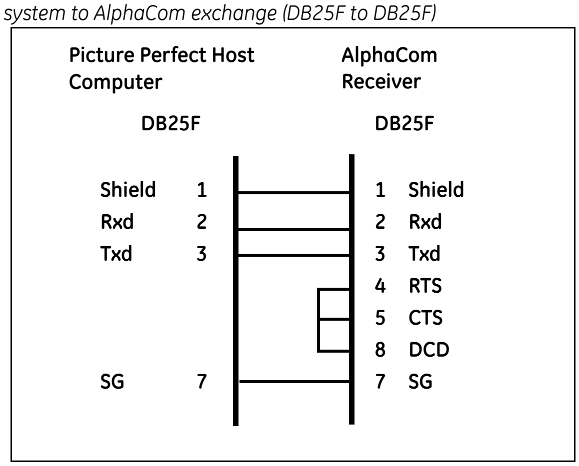
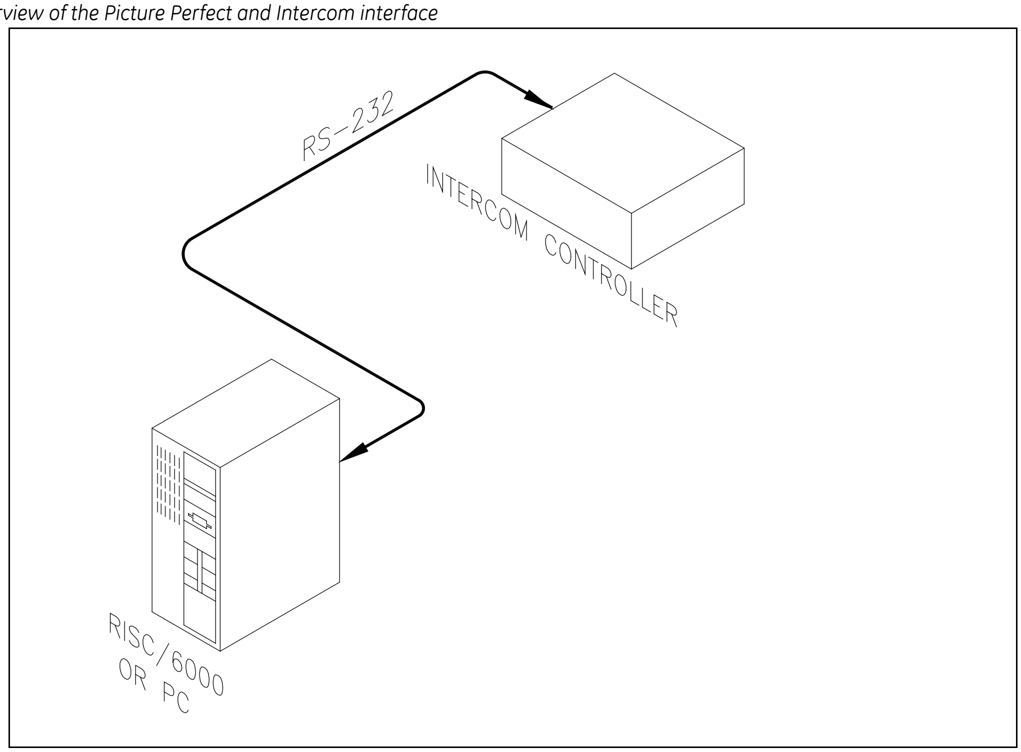


Figure 5. Overview of the Picture Perfect and Intercom interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- AlphaCom Exchange System
- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

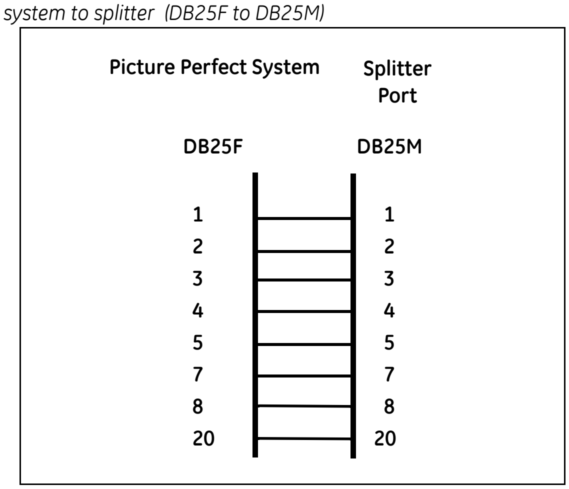
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the AlphaCom communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 6*.

Figure 6. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect from the splitter master port to the AlphaCom Exchange (See figure below).

Figure 7. Cable pinouts: splitter to AlphaCom Exchange (DB25F to DB25F)

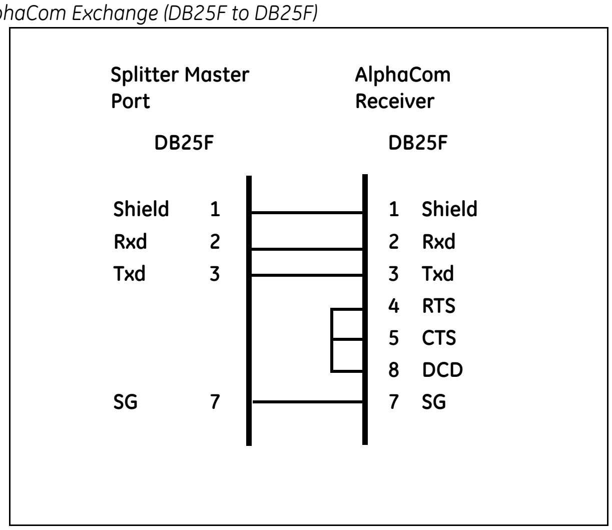


Figure 8. Overview of the cable configuration using a splitte

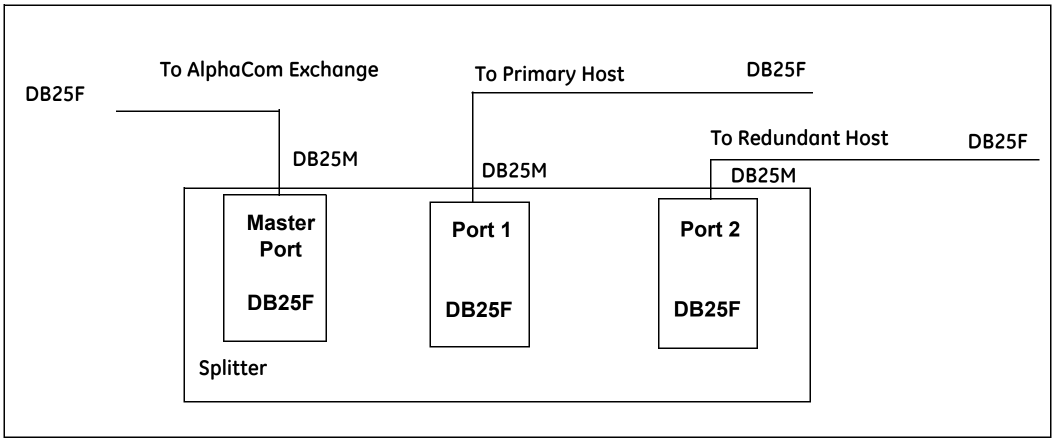
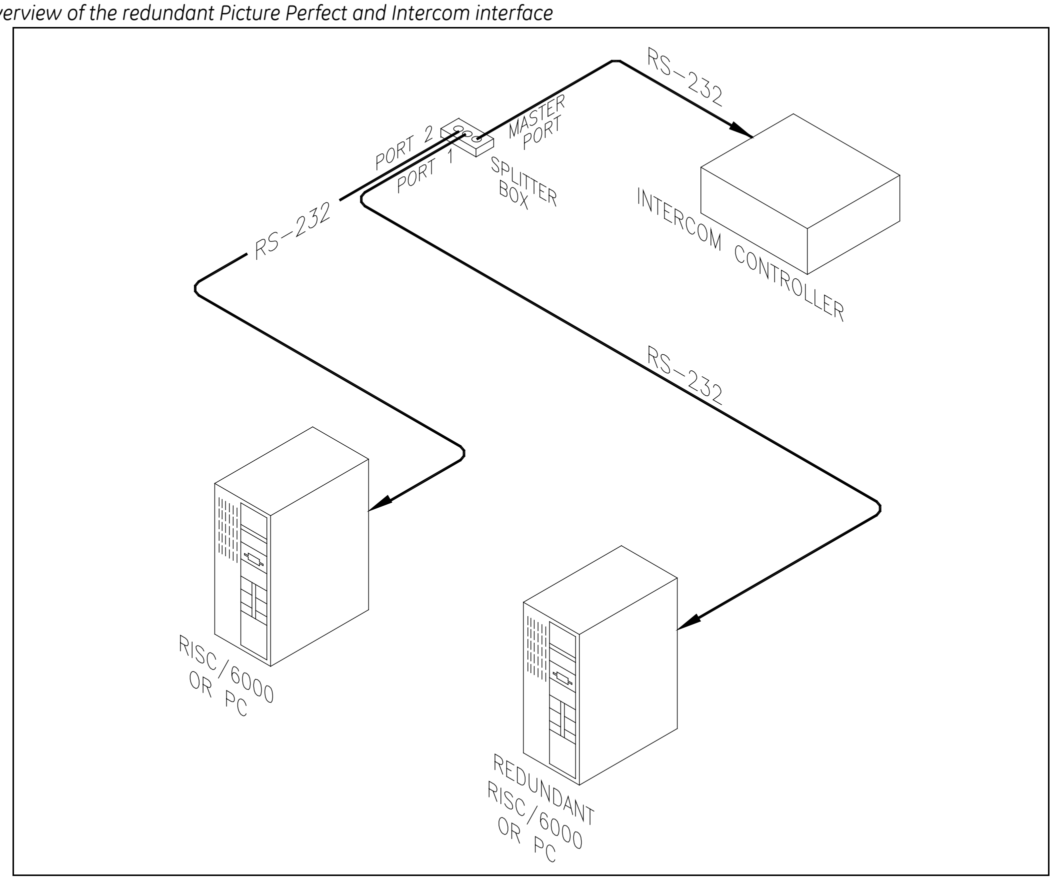


Figure 9. Overview of the redundant Picture Perfect and Intercom interface



Configuration

The Picture Perfect interface to the AlphaCom system allows alarms that are detected by the Picture Perfect system to trigger predefined events on the AlphaCom system. Before this can happen, Picture Perfect must be informed of which alarms should be sent to the Alphacom system and how that Picture Perfect alarm is mapped to an AlphaCom system alarm number.

Picture Perfect treats alarms as a collection of information, which includes:

- Input group
- Location
- Host number

The AlphaCom system distinguishes alarms by a unique four-digit identifier per alarm location and condition. Once you have set up the alarms on Picture Perfect, you need to set up the mapping of alarms to the AlphaCom system. This procedure is accomplished by executing a script which requires operator input.

Note: The AlphaCom interface uses the Picture Perfect CCTV backend process as it is an output interface. As such, CCTV reports will be used for determining locations.

For a successful configuration, follow these steps:

1. *Defining input groups* on page 31.
2. *Identifying location types* on page 31.
3. *Using SQL reports* on page 32.
4. *Mapping CCTV Monitored Events* on page 33.

Defining input groups

In the Picture Perfect system there are many possible sources of alarms. The fundamental concept is that alarms are triggered through input groups. There are several components of the system that use input groups. These are Areas, Doors, Readers, Input Points, Micros, Hosts, and Input Groups themselves. All of these windows allow you to select an input group for the various events that can occur at these locations. Only the Input Group window has a field to define the alarm associated with this group.

To trigger an AlphaCom event for an input point, you should create an input group for that point only. Then, you can associate the AlphaCom event to the alarm on that individual input group and, therefore, the point itself. Boolean input group alarms are not supported in this interface.

Identifying location types

An area is a group of one or more readers and represents a location type. A single area may be assigned to multiple readers and doors. Areas are similar to input groups, in they group a large number of readers together to make configuration easier. Unlike input groups, areas cannot contain other areas. This means that whenever an area event occurs, the unique location of the event (reader) is also reported. This gives you the ability to specify the exact camera to turn on because you know at what reader the lost badge is being used.

See *Table 1* for location types and alarm conditions. Detailed information may be found in the *Picture Perfect User Manual.*

Table 1. Where input groups are used

Location type	Alarm condition
Area	Invalid Badge (expired or no category match)
	Suspended Badge
	Lost Badge
	Unknown Badge
	Anti-Passback
	Duress
Door	Forced Open
	Held Open
	Pre-alarm
Reader	Valid Badge (exit button tamper only)
	Invalid Badge (all badge errors except Unknown)
Input Point	Alarm
Micro	Badge History Overflow
	Alarm History Overflow
	Upstream Micro Communications Failure
	Downstream Micro Communications Failure
	Reader Communications Failure
Host	Host-to-Host Communications Failure
	Network Database Communications Failure

Using SQL reports

During the installation process, nine SQL reports are installed. The reports are:

CCTV Areas
CCTV Doors
CCTV Inputs
CCTV Micros CommFailure
CCTV Micros Overflow
CCTV Micros ReaderFailure
CCTV Readers
CCTV Hosts
CCTV Alarms

These reports provide you with the information that you will need to know about mapping alarms to the AlphaCom system. To add or delete an alarm from the CCTV system, you must know the Alarm Id, Input Group Id, and Location Id.

These reports detail the alarm conditions defined within your system and display the required information. The information includes:

- Alarm Id
- Input Group Id
- Location Id

For example: If you want an alarm to be sent to the AlphaCom system whenever the door with the description `000-1-00 DOOR` is forced open, you must first generate a CCTV Doors Report to obtain the required information.

Generating a SQL Report

Follow these steps to generate a SQL report:

1. From the **Reports** menu, select the **Report** menu item, then click the **Report** tab.
2. From the **Select a Report Category** list pane, select the category for this report. When you select a category, the existing reports in that category display in the Select a Report list pane.
3. To open an existing report, select it from the **Select a Report** list pane, then from the toolbar, click **Run**.
4. Click **Print** to display the Print Preview page. From this window you may Save to pdf or Print to your local printer.

Mapping CCTV Monitored Events

Use the program `alphacom_map` to add, delete, and print the alarms that are sent to and received from the AlphaCom system. The `alphacom_map` program does not allow you to edit an alarm. To make changes to an alarm, you must first delete the alarm and then add a new alarm.

If the AlphaCom interface has been configured for a redundant Picture Perfect environment, then the changes made to the map file are reflected on the redundant host.

Refer to the following sections for more information:

- *Adding an alarm* on page 34.
- *Deleting an alarm* on page 37.
- *Changing an alarm* on page 38.
- *Printing the map file* on page 38.
- *Exiting the program* on page 40.

To run the `alphacom_map` program you will need to be logged onto the server as `root`.

To run the alphacom_map program, type at the command prompt: **`alphacom_map`** Enter

Adding an alarm

This section describes how to add a new AlphaCom controlled alarm. Refer to *Example of adding an AlphaCom alarm* on page 36 to see the messages and prompts that display when adding an alarm.

Follow these steps to add an AlphaCom alarm:

1. At the **Selection** prompt, type `a` to add a new AlphaCom controlled alarm.

   A message displays to confirm a new alarm is being added, and you will be prompted for the **Input Group Id** of the alarm to be added.

2. Enter the **Input Group Id**. The **Input Group Id** can be found on one of the CCTV SQL reports listed on page 32.

3. Once a valid **Input Group Id** has been entered, you will be prompted for the associated **Alarm Id**. Enter the associated **Alarm Id** from the same report entry as used for the **Input Group Id**.

4. Once a valid **Alarm Id** has been entered, you will be prompted for the associated **Location Id**. Enter the associated **Location Id** from the same report entry as used for the **Input Group** and **Alarm IDs**.

5. Once a valid **Location Id** has been entered, you will be prompted for the **Outgoing AlphaCom Alarm Number**, to which the Picture Perfect alarm you have just specified, will be mapped. Enter the number of the AlphaCom alarm that causes the AlphaCom Exchange device to perform the actions you want for this event when the Picture Perfect alarm occurs. The range of 1-to-9999 can be used for AlphaCom alarm numbers.

6. You will now be given the option to enter an associated alarm description for this mapping. The alarm description is useful when identifying a mapping entry on a report. Enter `y` to add an alarm description, or `n` to omit the description.

   - If you select `y`, you are prompted for the alarm description. The Picture Perfect **Alarm** description may be used, although any description that enables the user to identify which alarm it is, may be used. The description MUST fit on one line. The entry should be as concise as possible, because when the report is printed, the entries that are larger than the width of the paper will be wrapped to the next line, and the report may not be readable.
   - If you select `n`, the information you have entered displays, and you will be asked to confirm the entries. Skip to step 8.

7. Enter the **Alarm Description**. The information you have entered, including the alarm description, displays and you will be asked to confirm the entries.

8. If the entries are not correct, select `n` and the mapping options display, that is, you will return to step 1, where you may perform another selection, or exit the program.

   If the entries are correct, select `y`. If only one AlphaCom node is configured, then you will get a message informing you that the **Outgoing AlphaCom Alarm Number** you specified, is mapped to that AlphaCom node number. The mapping data you have specified will be added to the `alphacom.map` file. You will be returned to step 1, where you may make another mapping option selection.

   If multiple AlphaCom nodes were configured, a list will be displayed showing each node number that was configured, and the name of the port it is on. You will need to enter the node numbers of the

AlphaCom devices to which the **Outgoing AlphaCom Alarm Number** you specified is to be sent when the Picture Perfect alarm occurs.

9. Enter the **Node Numbers**. The node numbers you specified will be verified against the ones configured, and if they are valid, you will be asked to confirm the node number selection that you made.
10. If the alarm number to node number mappings are correct, select `y`, and the mapping data you have specified will be added to the `alphacom.map` file. You will be returned to step 1, where you may make another mapping option selection.

    If the mapping data is incorrect, select `n`, and you will return to step 9, where you will once again be prompted for the node number mappings.

Figure 10. Example of adding an AlphaCom alarm

```
# alphacom_map
**********************************************************
*                                                        *
* A) Add an AlphaCom controlled alarm                    *
*                                                        *
* D) Delete an outgoing AlphaCom controlled alarm        *
*                                                        *
* P) Print a hardcopy of all AlphaCom controlled alarms *
*                                                        *
* X) Exit                                                *
**********************************************************
 Selection: a
Adding an outgoing AlphaCom controlled alarm
----------------------------------------
Input Group ID (1-999999): 102
Picture Perfect Alarm ID (1-999999): 21
Location ID (1-99999): 45
Outgoing AlphaCom alarm number (1-9999): 15

You may now enter an optional alarm description to identify this mapping entry. For
example, the Picture Perfect alarm description may be used.
Do you wish to enter an alarm description (y/n)? [y] y

The alarm description must fit on one line. Enter the alarm description then hit
<ENTER>: 00-1-00 Door Forced Open

Adding: Picture Perfect input group 102, alarm 21, location 45, Alphacom alarm 15,
Alarm Description: 00-1-00 Door Forced Open
Is this OK (y/n)? [y] y

Adding an alarm to AlphaCom map entry
-------------------------------------
The following AlphaCom Node Numbers were configured at installation time, for the
specified ports:
Node
Number            Port
-------           ----
1                 /dev/tty1
2                 /dev/tty4
10                /dev/tty2
20                /dev/tty3
Enter the AlphaCom Node Numbers from the above list, for which alarm '15' will be
mapped. The Node Numbers should be separated by a space or tab.
Node numbers: 1 10
You have specified to map:
       Outgoing AlphaCom Alarm Number .. : 15
               to
       AlphaCom Nodes .................. : 1 10
Is this correct (y/n)? [y]
**********************************************************
*                                                        *
* A) Add an ALPHACOM controlled alarm                    *
*                                                        *
* D) Delete an ALPHACOM controlled alarm                 *
*                                                        *
* P) Print a hardcopy of all controlled alarms           *
*                                                        *
* X) Exit                                                *
**********************************************************
```

Deleting an alarm

This section describes how to delete an existing AlphaCom Exchange controlled alarm. Refer to *Figure 11, Example of deleting an AlphaCom alarm* on page 38 to see the messages and prompts that display when deleting an alarm.

When you delete an alarm from the mapping file, the Picture Perfect alarm no longer triggers the AlphaCom event.

Note: When the mapped AlphaCom alarm is deleted, the mappings for all of the AlphaCom nodes to which an AlphaCom alarm is sent, are also removed.

It is recommended that prior to beginning the deletion process, you follow the instructions for printing the map file, as explained in the section *Printing the map file* on page 38. This way you will have the Picture Perfect Alarm, Input Group, and Location Id, as well as the outgoing AlphaCom alarm number of the alarm you want to delete, handy.

Follow these steps to delete an AlphaCom alarm:

1. At the **Selection** prompt, type `d` to delete an AlphaCom controlled alarm.

   A message displays to confirm an alarm is being deleted, and you will be prompted for the **Input Group Id** of the alarm to be deleted.

2. Enter the **Input Group Id** of the alarm to be deleted.

3. Once a valid **Input Group Id** has been entered, you will be prompted for the associated **Alarm Id**. Enter the associated **Alarm Id**.

4. Once a valid **Alarm Id** has been entered, you will be prompted for the associated **Location Id**. Enter the associated **Location Id**.

5. Once a valid **Location Id** has been entered, you will be prompted for the **Outgoing AlphaCom Alarm Number**, to which the Picture Perfect alarm you have just specified, is mapped. Enter the number of the AlphaCom alarm.

   The mapping file is checked to see if there are any lines that match the information entered. If there are no lines, the message `No Matching Lines Found` displays, and you are returned to the **Selection** prompt, where you may choose another mapping option to perform.

   If a matching line is found, you are asked to confirm the deletion.

6. If the entries are correct, select `y` and all matching lines in the mapping files are removed, and you are returned to the **Selection** prompt, where you may choose another mapping option to perform.

   If you select `n`, the mapping files are not altered, and you are returned to the **Selection** prompt, where you may choose another mapping option to perform.

Figure 11. Example of deleting an AlphaCom alarm

```
# alphacom_map
**********************************************************
*                                                        *
* A) Add an outgoing AlphaCom controlled alarm           *
*                                                        *
* D) Delete an outgoing AlphaCom controlled alarm        *
*                                                        *
* P) Print a hardcopy of all AlphaCom controlled alarms  *
*                                                        *
* X) Exit                                                *
**********************************************************
 Selection: d
Deleting an outgoing AlphaCom controlled alarm
------------------------------------------
Input Group ID (1-999999): 102
Picture Perfect Alarm ID (1-999999): 21
Location ID (1-999999): 45
Outgoing AlphaCom alarm number (1-9999): 15
Are you sure (yn)? [y]

**********************************************************
*                                                        *
* A) Add an outgoing AlphaCom controlled alarm           *
*                                                        *
* D) Delete an outgoing AlphaCom controlled alarm        *
*                                                        *
* P) Print a hardcopy of all AlphaCom controlled alarms  *
*                                                        *
* X) Exit                                                *
**********************************************************
```

Changing an alarm

The `alphacom_map` program does not permit editing an entry. If you need to change any of the information for an alarm, follow these steps:

- Delete the existing alarm. Refer to *Deleting an alarm* on page 37.
- Add a new alarm. Refer to *Adding an alarm* on page 34.

Typically, only the AlphaCom alarm number might change which requires re-entering the information.

Printing the map file

This section describes how to print the `alphacom_map` file.

Follow these steps to print the file:

1. At the **Selection** prompt, type `p` to print the AlphaCom controlled alarms.
2. Enter the printer name.
3. Indicate if you want to sort the report.

If you select y, you are then prompted to select how the report should be sorted. The options are: Input Group Id, Alarm Id, Location Id, AlphaCom Alarm Number, or print the report without sorting. Continue with step 4.

If you selected n to not sort the file, the file will be printed and the mapping options display.

4. Enter the number of the field you wish to sort on. The file will be printed and you are returned to the **Selection** prompt, where you may choose another mapping option.

Refer to *Figure 12, Example of printing an AlphaCom alarm file* on page 39.

Figure 12. Example of printing an AlphaCom alarm file

```
# alphacom_map
*********************************************************
*                                                       *
* A) Add an outgoing AlphaCom controlled alarm          *
*                                                       *
* D) Delete an outgoing AlphaCom controlled alarm       *
*                                                       *
* P) Print a hardcopy of all AlphaCom controlled alarms *
*                                                       *
* X) Exit                                               *
*********************************************************
 Selection: p
Print the CCTV controlled alarm translation file
------------------------------------------------
Printer name: lp0
Sort the map file (y/n)? [y] y
        1. Input Group Id

        2. Alarm Id

        3. Location Id

        4. AlphaCom Alarm Number

        5. Exit (Print without sorting)

        Enter the number of the field to sort on: 1

request id is lp0-47 (1 file)

*********************************************************
*                                                       *
* A) Add an outgoing AlphaCom controlled alarm          *
*                                                       *
* D) Delete an outgoing AlphaCom controlled alarm       *
*                                                       *
* P) Print a hardcopy of all AlphaCom controlled alarms *
*                                                       *
* X) Exit                                               *
*********************************************************
 Selection:
```

Refer to *Figure 13, Example printed report sorted by input group id* on page 40 for a sample of a printed report.

Figure 13. Example printed report sorted by input group id

```
          Picture Perfect to AlphaCom mapped alarms
          =========================================

          Input             LocId/  AlphaCom                   Alarm
Type      Group  Id AlarmId InpType Alarm     Task Name        Description
====      ======== ======= ============================================
0         28       10      17       25       alphacom_comm    00-1-00 Door Held Open
0         102      21      45       15       alphacom_comm    00-1-00 Door Forced Open
0         39       201     51       202      alphacom_comm    RDR 00-1-00 Invalid Badge

AlphaCom Alarm Number to AlphaCom Node Numbers mappings
=========================================================
AlphaCom      AlphaCom
Alarm         Node Numbers
=======       =============
15            1
25            2 20
202           1 2 10
```

Exiting the program

If you have made any changes to the mapping file while running `alphacom_map` and you select `X` to exit, you will be asked if you want to inform the rest of the system of your changes.

- If you select `y`, then the system is informed of your mapping file changes. The system will re-read the mapping file and use it to determine which alarms will be routed to the AlphaCom Exchange controller. Any existing active alarms will not be re-run through the mapping file, only newly occurring alarms.
- If you are not finished making your changes, but are leaving the `alphacom_map` program temporarily, you can enter `n`. This will not inform the Picture Perfect system that the mapping file has been changed.

  However, if Picture Perfect is restarted, the current mapping file is read automatically. In other words, all your changes will be read at that time whether or not you are done with them.

Refer to *Figure 14, Example of exiting the program* on page 41, to see the prompts and messages that display when exiting from the `alphacom_map` program.

Figure 14. Example of exiting the program

```
# alphacom_map
*********************************************************
*                                                       *
* A) Add an AlphaCom controlled alarm                   *
*                                                       *
* D) Delete an AlphaCom controlled alarm                *
*                                                       *
* P) Print a hardcopy of all CCTV controlled alarms     *
*                                                       *
* X) Exit                                               *
*********************************************************
 Selection: x
You have made changes to the mapping file.
Do you want to inform the system of these changes (y/n)? Y

Sent SIGUSR2 signal to AlphaCom interface task alphacom_comm on this host
Sent SIGUSR2 signal to AlphaCom interface task msan on this host
#
```

Advanced configuration

The AlphaCom interface software supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the `/cas/db/text/alphacom.cfg` file. The file consists of a series of text lines, each containing a variable name followed by a value or setting.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as *vi*. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the extended configuration file:

```
#
#             alphacom.cfg 1.6
#
#             Copyright (C) 2000-2003 GE Interlogix, Inc.
              All Rights Reserved.
#
#
# alphacom.cfg 1.6 04/21/03
#
# This file contains the configuration information for the AlphaCom
# interface.
#
# RemoteConnAlarm - Defines the Picture Perfect alarm used to
#             display a communication loss alarm with the AlphaCom system
#             to the operator on the Picture Perfect Alarm Monitor.
```

```
#
# RemoteConnInGrp - Defines the Picture Perfect input group used to
#             display a communication loss alarm with the AlphaCom system
#             to the operator on the Picture Perfect Alarm Monitor. Each
#             configured AlphaCom has a unique input group, but all use the
#             same RemoteConnAlarm alarm.
#
# NumOfAlphaCom - Total number of AlphaCom connected to this interface
#
# PipeName, PipeSize - Defines a buffer area and size
#             for temporary storage of commands when the
#             connection is broken to the AlphaCom system.
#             The interface will buffer commands until the area is
#             full or communication is restored.
#
# MaxRetries - The maximum number of additional
#             attempts to resend a command to the AlphaCom system.
#
# AlarmResendOnFailOver - Value 1 enables resending alarm
#             on communication resumption. Value 0 disables it.
#
# AlphaComNodeNum - The node number of AlphaCom connected
#             to this interface. This value must be between
#             1 and 254.
#
# MyDeviceId - The device Id of this interface, as a unique
#             device address when connected to AlphaCom. This
#             value must be between 1 and 64.
#
# PortName - The name of the tty port where the cable
#             is connected to the AlphaCom system. For RISC
#             platforms running the AIX operating system, the port
#             name is /dev/ttyN where N is a number. For PC
#             platforms running the Linux operating
#             system, the port name is /dev/ttyN where N is Dxxx
#             (digiboard port) or Sxx (COM port), where x is a number.
#             Examples of valid port names are
#             /dev/tty1 for AIX and /dev/ttyD001 for Linux.
#
# PortBaud - The baud rate of the tty port used for
#             communication with the AlphaCom system.
#
# CharSize - The character size of the tty port used for
#             communication with the AlphaCom system.
#
# Parity - The parity of the tty port used for
#             communication with the AlphaCom system.
#
# Stop Bits - The stop bits of the tty port used for
```

```
#             communication with the AlphaCom system.
#
# These values are set up at installation, and are
# permanent! DO NOT touch these lines.
#
RemoteConnAlarm            293

PipeName                   /tmp/SANbe_pipe_alphacomm_comm_
PipeSize                   100

MaxRetries                 5
AlarmResendOnFailOver      1
CharSize                   8
Parity                     n
StopBits                   1

# The following values are set up based on your
# installation responses.
#
# AlphaCom-1
#
RemoteConnInGrp1           1
AlphaComNodeNum1           1
MyDeviceId1                10
PortName1                  /dev/tty1
PortBaud1                  9600

#
# AlphaCom-2
#
RemoteConnInGrp2           1
AlphaComNodeNum2           2
MyDeviceId2                11
PortName2                  /dev/tty4
PortBaud2                  9600

#
# AlphaCom-3
#
RemoteConnInGrp3           1
AlphaComNodeNum3           10
MyDeviceId3                12
PortName3                  /dev/tty2
PortBaud3                  9600

#
# AlphaCom-4
#
```

```
RemoteConnInGrp4          1
AlphaComNodeNum4          20
MyDeviceId4               13
PortName4                 /dev/tty3
PortBaud4                 9600

NumOfAlphaCom             4
```

Single device support

To configure a Picture Perfect system to support the sending of commands to only one output device in response to a single Picture Perfect alarm event, use the `msan.set_single` utility. A sample execution of this utility is provided below. Note that if multiple output devices are installed and Picture Perfect is configured for single device support, a command will be sent to only one of the installed output devices in response to a Picture Perfect alarm event. You may wish to configure the system in this manner if each alarm event is to be routed to only one output and your require maximum interface performance. A slight performance gain occurs since the output device mapping tables do not need to be searched for all matching entries. As soon as the first match is found, the search terminates.

To change the Picture Perfect output device support option to single, perform the following steps:

1. Log in to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set single` Enter

   The following is a sample output from this command:

```
Querying the tps_daemons table ...
Updating tps_daemons entry 54 /cas/bin/msan R A 20030421 175910 statement = UPDATE
tps_daemons SET pathname = '/cas/bin/msan', modify_date = '20030423', modify_time =
'195449' WHERE id = 54 statement processed OK, 1 rows affected
Successfully update tps_daemons table entry
54 cas/bin/msan R A 20030421 175910
```

Multiple device support issues

The original design of the output interfaces supported only a single output device and allowed only one command to be sent in response to a Picture Perfect alarm event. With the introduction of enhanced output interfaces, the design was extended to support multiple devices connected to a single Picture Perfect host system. In addition, any Picture Perfect alarm event can cause output of commands to multiple devices. Two utilities are provided to turn the multiple device feature on or off. These are described below. For compatibility with existing systems, the default mode during output interface software installation or upgrade is single device support. You must shut down and restart Picture Perfect for the change to take effect.

Note: If a new output is installed or you are upgrading an existing output interface, and you were previously using the multiple device support feature, you must re-activate the multiple device support feature after installation.

Multiple device support

To configure a Picture Perfect system to support the sending of commands to multiple output devices in response to a single Picture Perfect alarm event, use the `msan.set_multiple` utility. A sample execution of this utility is provided below.

Note: You should configure the Picture Perfect software for multiple device support only if commands are to be routed to more than one output device for an alarm event. There is a slight performance penalty for this configuration as the output device mapping tables must be fully SEARCHED to find all matches indicating the routing of a command for the specific alarm event.

To change the Picture Perfect output device support option to multiple, perform the following steps:

1. Log in to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set_multiple` Enter

   : The following is a sample output from this command:

```
Querying the tps_daemons table ...
Updating tps_daemons entry 54 /cas/bin/msan R A 20030421 175910 statement = UPDATE
tps_daemons SET pathname = '/cas/bin/msan -m', modify_date = '20030423', modify_time =
'195449' WHERE id = 54 statement processed OK, 1 rows affected
Successfully update tps_daemons table entry
54 cas/bin/msan R A 20030421 175910
```

Interface data file backup and restore

The AlphaCom interface software requires several data files for its operation. These files are created during the software installation process and are summarized in *Table 2* below. Normal use of the interface software may cause changes to one or more of these files. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The AlphaCom software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the AlphaCom interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 2. AlphaCom interface data files

Data file name	Description
`/cas/db/text/alphacomm_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/alphacomm.redundant.cfg`	AlphaCom redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.
`/cas/db/text/alphacomm.map`	Alarm map file that maps Picture Perfect alarm events to AlphaCom alarm numbers as described in *Configuration* on page 31.
`/cas/db/text/alphacomm_ata.map`	Alarm map file that maps the AlphaCom alarm to the AlphaCom nodes to which it is to be sent as described in *Configuration* on page 31.

Appendix B Configuring a CCTV interface

This appendix provides information on configuring the interface between a CCTV controller and Picture Perfect, which provides the capability to automatically control CCTV cameras.

In this appendix:

Introduction

The CCTV control systems operate separately from Picture Perfect and require their own hardware and software which is provided by the CCTV manufacturer. The interface between a CCTV controller and Picture Perfect provides the capability to automatically control CCTV cameras.

For controllers providing video loss monitoring and reporting using the controller printer port, an optional video loss interface component of Picture Perfect can be configured to issue alarms using the Alarm Monitor feature whenever a camera video signal has been lost.

The first step is to configure the Picture Perfect system and the CCTV system or to verify the set up if this is an existing system. Next, use Picture Perfect to link or “map” the desired Picture Perfect alarms to the appropriate CCTV cameras. When the mapped alarm is received by Picture Perfect, a message is sent to the CCTV system to turn on the linked CCTV cameras and monitors. The CCTV system will then control the appropriate cameras and monitors. No operator intervention is required. As an alarm is cleared by the operator from the Picture Perfect Alarm Monitor screen, the CCTV system will be informed that the alarm has been reset and the appropriate camera will turn off.

The CCTV interface to Picture Perfect supports the configuration of multiple CCTV devices connecting to the Picture Perfect host.

Refer to *Figure 25, Overview of the Picture Perfect and CCTV interface* on page 55.

Redundant systems

The CCTV interface to Picture Perfect supports operations in a redundant Picture Perfect environment where two hosts have connectivity to a single CCTV switcher. Connectivity is achieved by using a splitter between the Picture Perfect system and the CCTV switcher. This allows the physical connection of the CCTV switcher to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the CCTV interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host communicates with the CCTV switcher. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host.

Alarm notifications received by the interface software executing on the redundant host are processed but output to the switcher is suppressed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the CCTV switcher.

Refer to *Figure 28, Overview of the redundant Picture Perfect and CCTV interface* on page 57.

Software requirements

The software requirements for the CCTV system and the Picture Perfect system are listed below.

Standalone system

If you are using a standalone Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- One of the following Picture Perfect CCTV interface packages:
  - American Dynamics (`amdyn`)
  - Burle Allegiant (`allegiant`)
  - Burle Allplex (`allplex`)
  - Grundig (`grundig`)
  - Javelin (`javelin`)
  - Kalatel (`kalatel`)
  - MaxPro (`maxpro`)
  - Panasonic Proteus (`panasonic`)
  - Panasonic 550 (`panasonic550`)
  - Pelco (`pelco`)
  - Vicon Viper (`viper`)

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Redundant System (`pprs`) package
- One of the following Picture Perfect CCTV interface packages:
  - American Dynamics (`amdyn`)
  - Burle Allegiant (`allegiant`)
  - Burle Allplex (`allplex`)
  - Grundig (`grundig`)
  - Javelin (`javelin`)
  - Kalatel (`kalatel`)
  - MaxPro (`maxpro`)
  - Panasonic Proteus (`panasonic`)
  - Panasonic 550 (`panasonic550`)
  - Pelco (`pelco`)
  - Vicon Viper (`viper`)

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- CCTV controller, provided by the CCTV manufacturer.

  Refer to your CCTV manual for dip switch settings. Use the default settings.
- CCTV cameras and monitors
- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the CCTV communication program is started.

- Cable to connect the Picture Perfect system to the CCTV switcher console port. Refer to *Figure 15* through *Figure 24*, as appropriate for your CCTV interface.

Figure 15. American Dynamics: cable pinouts: terminal block to DB25F and terminal block to DB9F

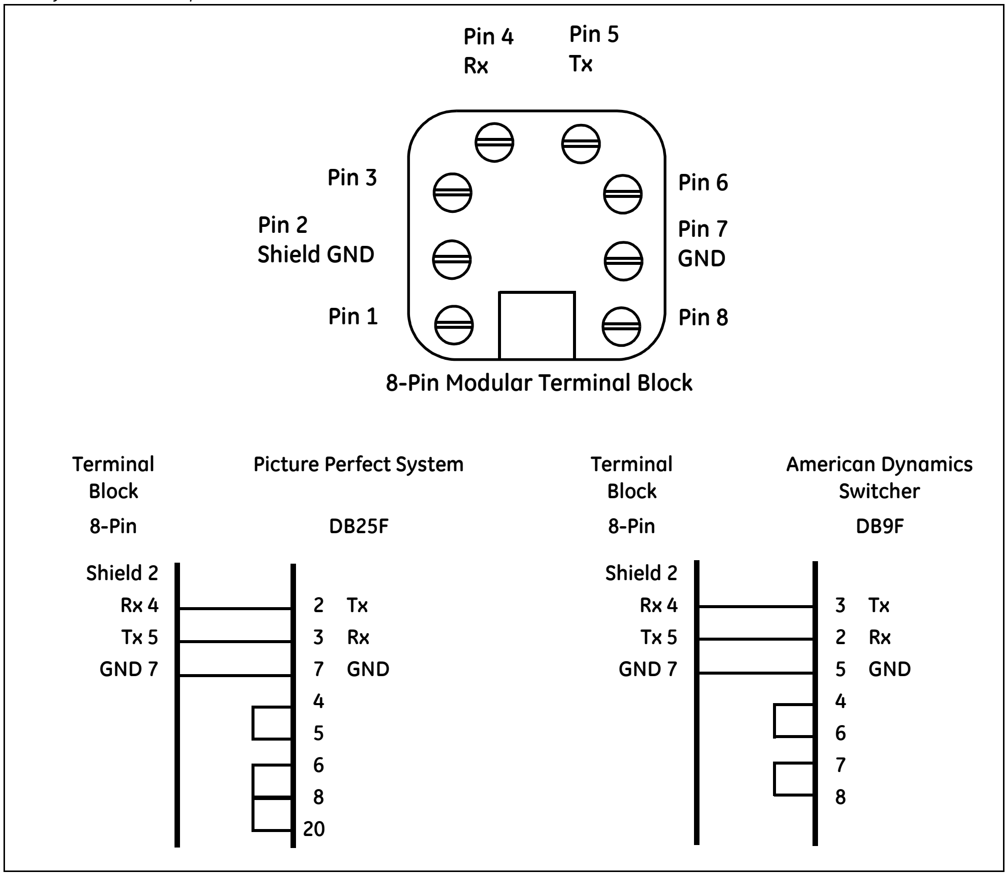


Figure 16. Burle Allegiant: cable pinouts: Picture Perfect system to switcher (DB25F to DB9M)

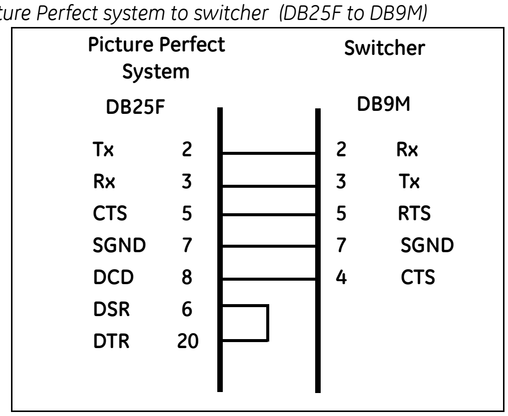


Figure 17. Grundig: cable pinouts: Picture Perfect system to Grundig Matrix VAZ300 controller (DB25F to DB9M)

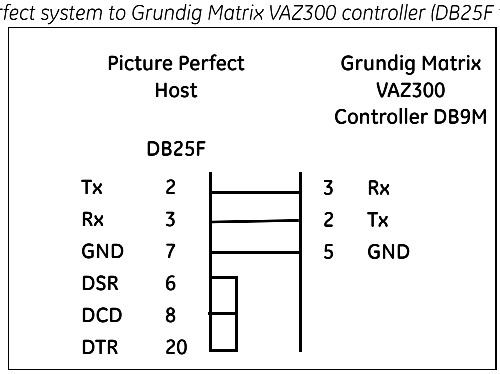


Figure 18. Javelin: cable pinouts: Picture Perfect system to javelin controller (DB25F to DB9F)

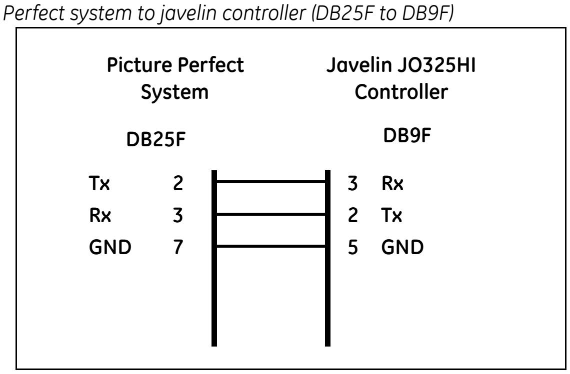


Figure 19. Kalatel cable pinouts: Picture Perfect system to converter box (DB25F to DB9M)

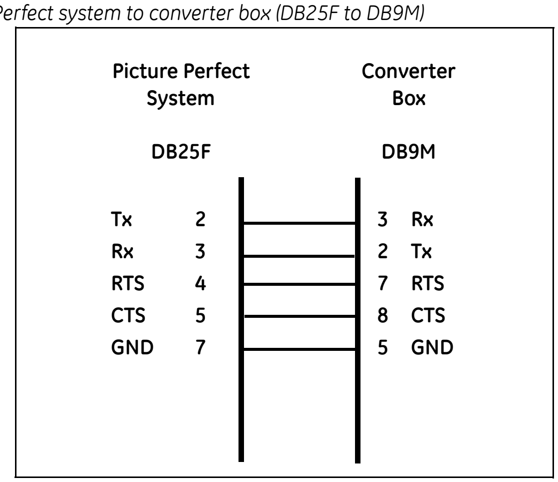


Figure 20. MaxPro cable pinouts: Picture Perfect system to MAXPRO RD-AT100 MAX1000 controller (DB25F to DB25M)

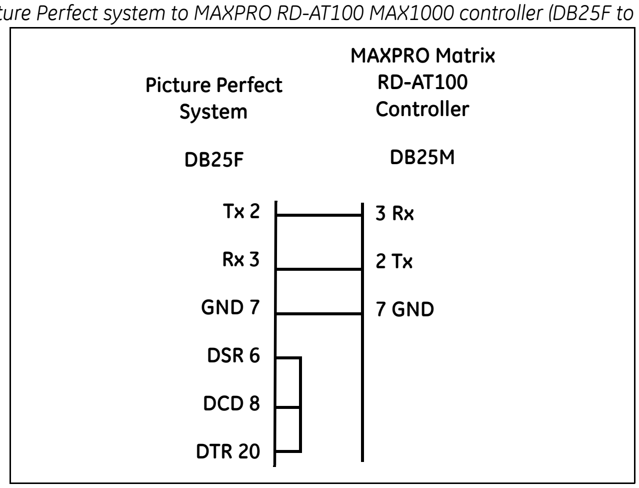


Figure 21. Panasonic 550 cable pinouts: Picture Perfect system to Panasonic 550 (DB25F to DB25M)

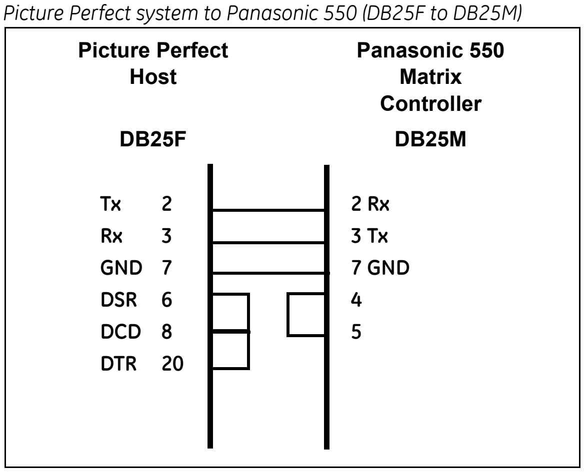


Figure 22. Panasonic Proteus/Pelco/Pelcob cable pinouts: Picture Perfect system to: Bridge PC (Panasonic Proteus, Pelco,or Pelcob CM9750-DT) (DB25F to DB9F

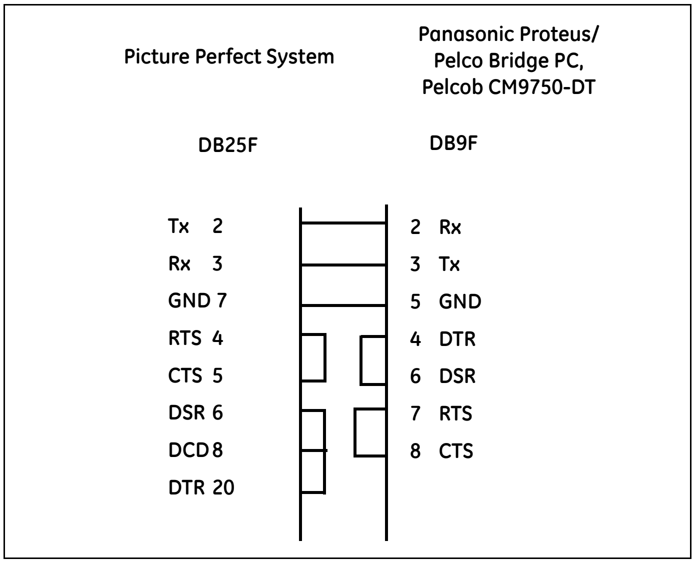


Figure 23. Pelco cable pinouts ('pelco' only): Bridge PC to controller (DB9F to DB9F)

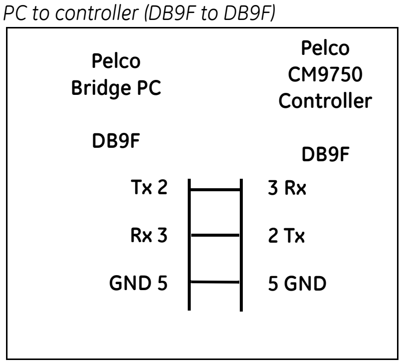
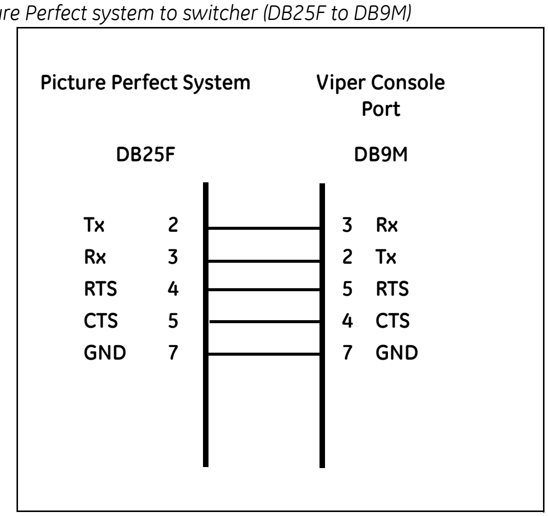


Figure 24. Vicon Viper cable pinouts: Picture Perfect system to switcher (DB25F to DB9M)

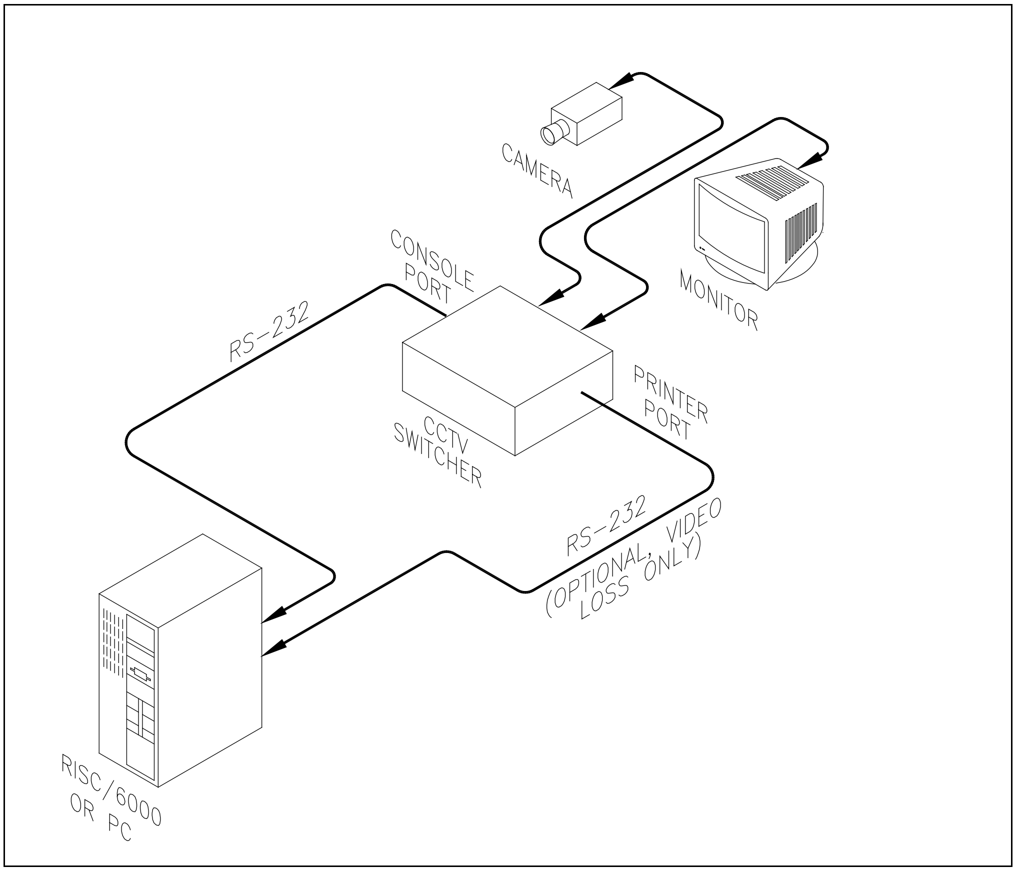


Video loss monitoring and reporting

If you are using a controller that provides video loss and alarm reporting, you will also need the items listed below.

- A second RS-232-C serial port.
- A second cable is wired to connect the Picture Perfect system to the CCTV switcher printer port. Refer to *Figure 25, Overview of the Picture Perfect and CCTV interface*.

Figure 25. Overview of the Picture Perfect and CCTV interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- CCTV controller, provided by the CCTV manufacturer.

  Refer to your CCTV manual for dip switch settings. They should be set to the default.

- CCTV cameras and monitors.
- Serial ports.

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

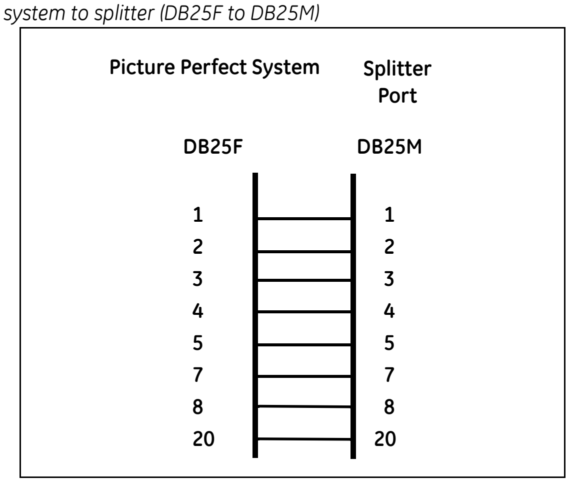
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the CCTV communication program is started.

- A standard splitter box.
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 26*.

Figure 26. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect the splitter master port to the CCTV switcher console port. Refer to *Figure 15* on page 51 through *Figure 24* on page 54, as appropriate for your CCTV interface. The Splitter Master Port pinout will correspond to the Picture Perfect System pinouts in the diagrams.

Video loss monitoring and reporting

If you are using a controller that provides video loss monitoring and alarm reporting, you will also need the items listed below.

- A second RS-232-C serial port for each host.
- A second splitter box.
- Another pair of pass-through cables to connect the Picture Perfect hosts to splitter box (wired as described in *Figure 27*).
- A second cable to connect the splitter master port to the CCTV switcher printer port (as shown in *Figure 27*).

Figure 27. Overview of the cable configuration using a splitter

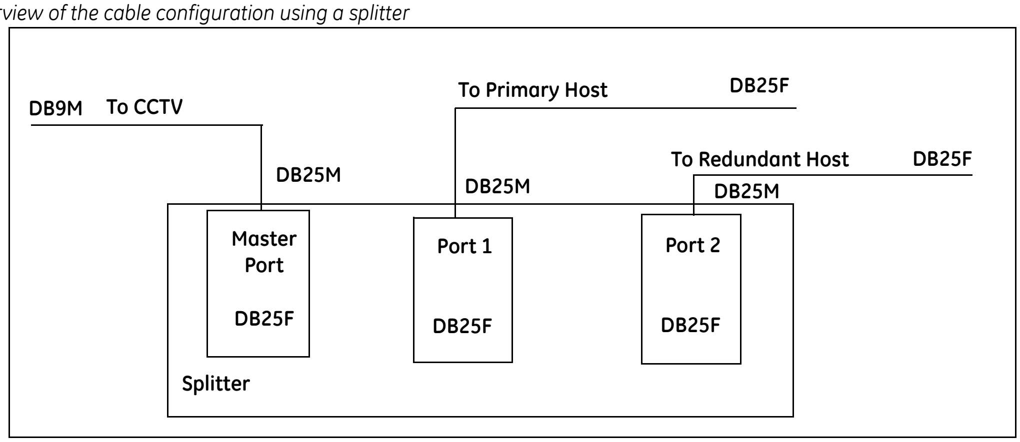
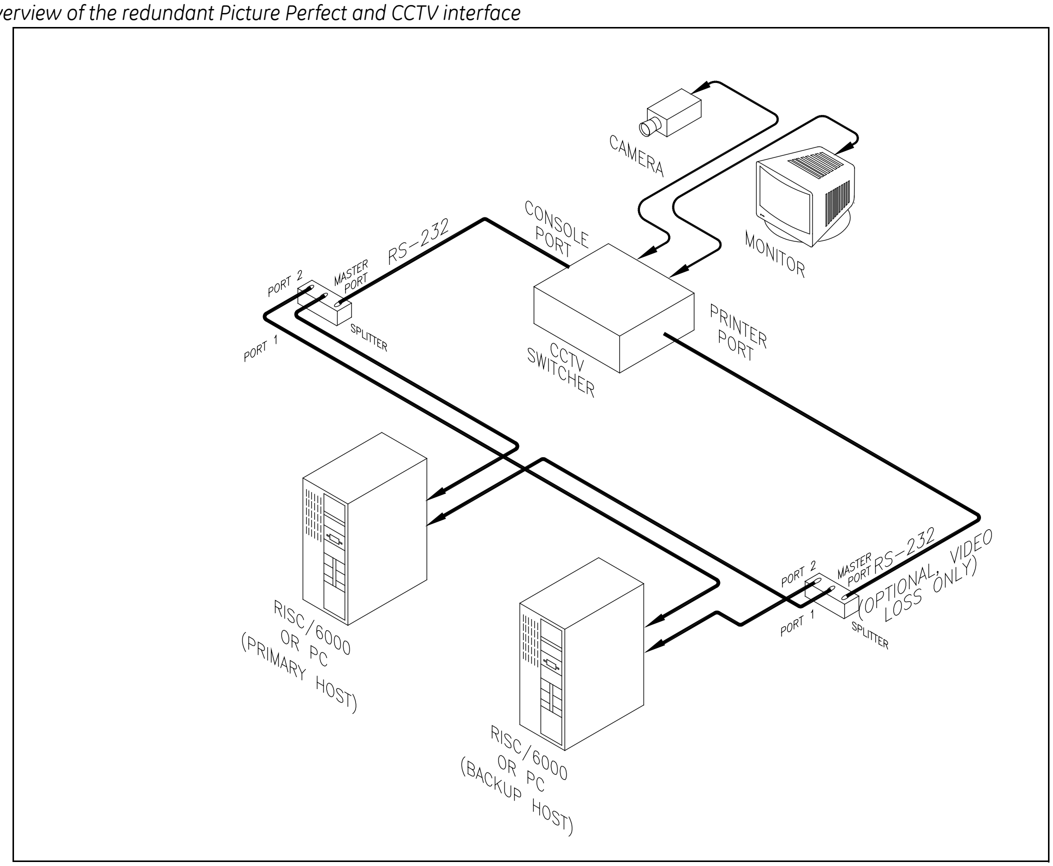


Figure 28. Overview of the redundant Picture Perfect and CCTV interface



Configuration

The Picture Perfect interface to a CCTV control system allows alarms that are detected by the Picture Perfect system to trigger CCTV cameras to turn on or off. Before this can happen, Picture Perfect must be informed of which alarms should be sent to the CCTV system and how that Picture Perfect alarm is mapped to a CCTV system alarm number.

Picture Perfect treats alarms as a collection of information, which includes:

- Input group
- Areas
- Host number

The CCTV system distinguishes alarms by a unique three digit identifier per alarm location and condition. Once you have set up the alarms on Picture Perfect, you will need to set up the mapping of alarms to the CCTV system. This procedure is accomplished by executing a script which requires operator input.

Note: There is a one-way communication between the Picture Perfect system and the CCTV switcher regarding alarms. Alarms will only be sent from Picture Perfect to the CCTV switcher. There will be no alarms sent from the CCTV controller to the Picture Perfect system. The CCTV system will not send Video Loss or Sync Loss alarms back to Picture Perfect.

A successful system configuration of a CCTV interface for Picture Perfect involves the following steps:

- *Defining input groups* on page 58.
- *Identifying location types* on page 59.
- *Using SQL reports* on page 60.
- *Mapping CCTV monitored events* on page 61.
- *Configuring and monitoring alarms in Picture Perfect* on page 69.

Defining input groups

In the Picture Perfect system, there are many possible sources of alarms. The fundamental concept is that alarms are triggered through input groups. There are several components of the system that use input groups. These are Areas, Doors, Readers, Input Points, Micros, Hosts, and Input Groups themselves. All of these windows allow you to select an input group for the various events that can occur at these locations. The Input Group window is the only one with a field to define the alarm associated with this group.

For the purposes of CCTV control, it does not make sense to associate a CCTV event to an input group alarm. Input groups that are made up from other input groups, such as Boolean input groups, do not necessarily report the actual triggering location. For example, with a Boolean (AND) group all input points must be on, so which camera would you turn on? Boolean input group alarms are not supported in this interface.

To trigger a CCTV event for an input point, you should create an input group for that point only. Then, you can associate the CCTV event to the alarm on that individual input group and, therefore, the point itself.

Detailed information may be found in the *Picture Perfect User Manual*.

Identifying location types

An area is a group of one or more readers and represents a location type. A single area may be assigned to multiple readers and doors. Areas are similar to input groups, in that they group a large number of readers together to make configuration easier. Unlike input groups, areas cannot contain other areas. This means that whenever an area event occurs the unique location of the event (the reader) is also reported. This gives you the ability to specify the exact camera to turn on because you know at what reader the lost badge is being used.

See *Table 3* for a listing of location types and alarm conditions. Detailed information can be found in the *Picture Perfect User Manual*.

Table 3. Where input groups are used

Location Type	Alarm Condition
Area	Invalid Badge (expired or no category match)
	Suspended Badge
	Lost Badge
	Unknown Badge
	Anti-Passback
	Duress
Door	Forced Open
	Held Open
	Pre-alarm
Reader	Valid Badge (exit button tamper only)
	Invalid Badge (all badge errors except Unknown)
Input Point	Alarm
Micro	Badge History Overflow
	Alarm History Overflow
	Upstream Micro Communications Failure
	Downstream Micro Communications Failure
	Reader Communications Failure
Host	Host to Host Communications Failure
	Network Database Communications Failure

Using SQL reports

During the installation process, nine SQL reports are installed:

- CCTV Areas
- CCTV Doors
- CCTV Inputs
- CCTV Micros CommFailure
- CCTV Micros Overflow
- CCTV Micros ReaderFailure
- CCTV Readers
- CCTV Hosts
- CCTV Alarms

These reports provide you with the information that you will need to know about mapping alarms to a CCTV system. To add or delete an alarm from the CCTV system, you must know the Alarm Id, Input Group Id, Location Id, and the CCTV alarm number.

These reports detail the alarm conditions defined within your system and display the required information. The information includes:

- Alarm Id
- Input Group Id
- Location Id

For example: If you want an alarm to be sent to the CCTV system whenever the door with the description `000-1-00 DOOR` is forced open, first generate a CCTV Doors Report to obtain the required information.

Generating an SQL report

Follow these steps to generate a SQL report:

1. From the **Reports** menu, select the **Report** menu item, then click the **Report** tab.
2. From the **Select a Report Category** list pane, select the category for this report. When you select a category, the existing reports in that category display in the **Select a Report** list pane.
3. To open an existing report, select it from the Select a Report list pane, then from the toolbar, click Run.
4. Click **Print** to display the **Print Preview** page. From this window you may **Save to pdf** or **Print** to your local printer.

Mapping CCTV monitored events

Each CCTV interface package has an assigned prefix:

American Dynamics	amdyn
Burle Allegiant	alle
Burle Allplex	allp
Grundig	grundig
Javelin	jav
Kalatel	ktd
MaxPro	maxpro
Panasonic Proteus	pfw
Panasonic 550	panasonic
Pelco	pelco
Pelcob	pelcob
Vicon Viper	viper

Use the program `<package_prefix>_cctv_map` to add, delete, and print the alarms that are sent to and received from the CCTV system (where `<package_prefix>` is the prefix for the CCTV interface package as listed above). The `<package_prefix>_cctv_map` program does not allow you to edit an alarm. To make changes to an alarm, you must first delete the alarm and then add a new alarm.

If the CCTV interface has been configured for a redundant Picture Perfect environment, then the changes made to the map file are reflected on the redundant host.

Refer to the following sections for more information:

- *Adding an alarm* on page 62.
- *Deleting an alarm* on page 64.
- *Changing an alarm* on page 65.
- *Printing the map file* on page 66.
- *Exiting the program* on page 68.

To run the `<package_prefix>_cctv_map` program you need to be at the command prompt of a terminal window or on the system console.

To open a terminal window and start the program:

1. Left-click on a blank portion of the screen.

   The **Clients** menu displays.

2. Select **New Window.**

   A `dtterm` window will appear with the title **dtterm**. If you are not logged in as the `root` user, you will need to type `su - root` to become the root user. You can now start the `<package_prefix>_cctv_map` program.

3. To run the `<package_prefix>`**_cctv_map** program, type:
   `<package_prefix>_cctv_map` Enter

Adding an alarm

This section describes how to add a new CCTV controlled alarm. The Kalatel `ktd_cctv_map` is used as an example. Refer to *Figure 29, Example of adding a Kalatel CCTV alarm* on page 63 to see the messages and prompts that display when adding an alarm.

Follow these steps to add a CCTV alarm:

1. At the **Selection** prompt, type `a` to add a new CCTV controlled alarm. A message displays to confirm a new alarm is being added.
2. Enter the **Alarm Id**. The Alarm Id can be found on one of the CCTV SQL reports listed on page 60.
3. Enter the **Input Group Id**. The Input Group Id can be found on one of the CCTV SQL reports listed on page 60.
4. Enter the **Location Id.** The Location Id can be found on one of the CCTV SQL reports listed on page 60.

   If you have only a single instance of the CCTV interface package installed, then you will be prompted for the CCTV alarm number. The CCTV alarm number is actually the number of a camera attached to the CCTV system that will perform the CCTV actions that you want for this event. The range of numbers 0 to 511 can be used for CCTV alarm numbers, or -2048 to -1 if using a Kalatel command string mapping. Skip to step 6.

   If you have installed multiple CCTV interfaces, then a list of the ports that have been configured for the CCTV devices will be displayed, select the one to which this alarm is to be forwarded.
5. Enter the name of the port, for example: `tty1`.

   You will be prompted for the CCTV alarm number.
6. Enter the CCTV alarm number. The CCTV alarm number is actually the number of a camera attached to the CCTV system that performs the CCTV actions that you want for this event. The range of numbers 0 to 511 can be used for CCTV alarm numbers, or -2048 to -1 if using a Kalatel command string mapping.
7. Indicate if you want to enter an alarm description. The alarm description is useful when identifying a mapping entry on a report. Enter `y` to add an alarm description or `n` to omit the description.

   If you select `y`, you are prompted for the alarm description. The Picture Perfect alarm description may be used, although any description that enables the user to identify which alarm it is may be used. The description must fit on one line. The entry should be as concise as possible, because when the report is printed the entries that are larger than the width of the paper will be wrapped to the next line and the report may not be readable.

   If you select `n`, the information you have entered displays and you will be asked to confirm the entries. Skip to step 9.
8. Enter the alarm description.

   The information you have entered, including the alarm description, displays and you will be asked to confirm the entries.
9. If the entries are correct, select `y` and the mapping options display. Select another option. Refer to the section *Exiting the program* on page 68 for more information about making changes and exiting the program.

If you select `n`, the mapping options display. If the information entered is not correct, add the alarm again. If the information entered is invalid, delete the alarm. Refer to the section *Exiting the program* on page 68 for more information about making changes and exiting the program.

Refer to *Figure 29, Example of adding a Kalatel CCTV alarm* on page 63.

Figure 29. Example of adding a Kalatel CCTV alarm

```
# ktd_cctv_map
**********************************************************************
*                                                                    *
* A) Add a KALATEL CCTV controlled alarm                             *
*                                                                    *
* D) Delete a KALATEL CCTV controlled alarm                          *
*                                                                    *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms          *
*                                                                    *
* X) Exit                                                            *
*                                                                    *
**********************************************************************

 Selection: a
Adding an outgoing CCTV controlled alarm
----------------------------------------
Picture Perfect Alarm ID (1-999999): 21
Input Group ID (1-999999): 102
Location ID (1-999999): 45
When installing, you configured the kalatel interfaces to use the following
ports:
tty5
tty7
Enter the name of the port to use from the list above, e.g. ttyD001
or tty1: tty5
Outgoing Kalatel site number (0-511): 15
- - OR - -
Kalatel Command Strings Table index (-2048 to -1):123

You may now enter an optional alarm description to identify this mapping
entry. For example, the Picture Perfect alarm description may be used.
Do you wish to enter an alarm description (y/n)? y

The alarm description must fit on one line. Enter the alarm description then
hit <ENTER>:Boiler Room Thermostat DI
Is this OK (y/n)? y

**********************************************************************
*                                                                    *
* A) Add a KALATEL CCTV controlled alarm                             *
*                                                                    *
* D) Delete a KALATEL CCTV controlled alarm                          *
*                                                                    *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms          *
*                                                                    *
* X) Exit                                                            *
*                                                                    *
**********************************************************************
Selection:
```

Deleting an alarm

This section describes how to delete an existing CCTV controlled alarm. Refer to *Figure 30, Example of deleting a Kalatel CCTV alarm* on page 65 to see the messages and prompts that display when deleting an alarm.

When you delete an alarm from the mapping file, the Picture Perfect alarm no longer triggers a CCTV action.

Follow these steps to delete a CCTV alarm:

1. At the **Selection** prompt, type `d` to delete a CCTV controlled alarm.

   A message displays to confirm an alarm is being deleted.

2. Enter the **Alarm Id**. The Alarm Id can be found on one of the CCTV SQL reports.
3. Enter the **Input Group Id**. The Input Group Id can be found on one of the CCTV SQL reports.
4. Enter the **Location Id**. The Location Id can be found on one of the CCTV SQL reports.

   If you have only a single instance of the CCTV interface installed, then you will be prompted for the CCTV alarm number. Skip to step 6.

   If you have installed multiple CCTV interfaces, then a list of the ports that have been configured for the CCTV devices will be displayed, and you need to select the one to which this alarm is to be forwarded.

5. Enter the name of the port, for example: `tty1`.

   You will be prompted for the CCTV alarm number.

6. Enter the CCTV alarm number.

   The mapping file is checked to see if there are any lines that match the information entered.

   - If there are no lines, the message "NO MATCHING LINES FOUND" displays and the mapping options display.
   - If a matching line is found, you are asked to confirm the deletion.

7. If the entries are correct, select `y` and all matching lines in the mapping file are removed and the mapping options display.
   If you select `n`, the mapping options display. Refer to the section *Exiting the program* on page 68 for more information about making changes and exiting the program.

Refer to *Figure 30, Example of deleting a Kalatel CCTV alarm* on page 65.

Figure 30. Example of deleting a Kalatel CCTV alarm

```
# ktd_cctv_map
*********************************************************************
*                                                                   *
* A) Add a KALATEL CCTV controlled alarm                            *
*                                                                   *
* D) Delete a KALATEL CCTV controlled alarm                         *
*                                                                   *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms         *
*                                                                   *
* X) Exit                                                           *
*                                                                   *
*********************************************************************

 Selection: d
Deleting an outgoing CCTV controlled alarm
------------------------------------------
Input Group ID (1-999999): 102
Picture Perfect Alarm ID (1-999999):21
Location ID (1-999999): 45
When installing, you configured the kalatel interfaces to use the following
ports:
tty5
tty7

Enter the name of the port to use from the list above, e.g. ttyD001
or tty1: tty5
Outgoing Kalatel site number (0-511)
-- OR --
Kalatel Command Strings Table index (-2048 to -1): 123

Are you sure (y/n)? [y]

*********************************************************************
*                                                                   *
* A) Add a KALATEL CCTV controlled alarm                            *
*                                                                   *
* D) Delete a KALATEL CCTV controlled alarm                         *
*                                                                   *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms         *
*                                                                   *
* X) Exit                                                           *
*                                                                   *
*********************************************************************
Selection:
```

Changing an alarm

The `<package_prefix>_cctv_map` program does not permit editing an entry. If you need to change any of the information for an alarm, follow these steps:

1. Delete the existing alarm. Refer to *Deleting an alarm* on page 64.
2. Add a new alarm. Refer to *Adding an alarm* on page 62.

Typically, only the CCTV alarm number might change which requires re-entering the information.

Printing the map file

This section describes how to print the `<package>.map` file.

Follow these steps to print the file:

1. At the **Selection** prompt, type `p` to print the CCTV controlled alarms.
2. Enter the printer name.
3. Indicate if you want to sort the report.

   If you selected `n` to not sort the file, the file will be printed and the mapping options display.

   If you select `y`, you are then prompted to select how the report should be sorted. The options are: Input Group Id, Alarm Id, Location Id, alarm number, or print the report without sorting. Continue with step 4.
4. Enter the number of the field you wish to sort on. The file will be printed and the mapping options display which allows you to make another selection.

Refer to *Figure 31, Example of printing a Kalatel CCTV alarm file* on page 67.

Figure 31. Example of printing a Kalatel CCTV alarm file

```
# ktd_cctv_map
*****************************************************************
*                                                               *
* A) Add a KALATEL CCTV controlled alarm                        *
*                                                               *
* D) Delete an KALATEL CCTV controlled alarm                    *
*                                                               *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms     *
*                                                               *
* X) Exit                                                       *
*                                                               *
*****************************************************************
 Selection: p
Print the CCTV controlled alarm translation file
-----------------------------------------------
Printer name: lp5
Sort the map file (Y/N)? y
    1. Input Group Id
    2. Alarm Id
    3. Location Id
    4. Kalatel Site Number or Command String Index
    5. Exit (Print without sorting)

Enter the number of the field to sort on: 4
Request id is lp5-12 (1 file)

*****************************************************************
*                                                               *
* A) Add a KALATEL CCTV controlled alarm                        *
*                                                               *
* D) Delete a KALATEL CCTV controlled alarm                     *
*                                                               *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms     *
*                                                               *
* X) Exit                                                       *
*                                                               *
*****************************************************************
 Selection:
```

Refer to *Figure 32, Example printed report sorted by Kalatel site number or command string index* on page 68 for a sample of a printed report.

Figure 32. Example printed report sorted by Kalatel site number or command string index

```
10/25/96 15:59
                   Picture Perfect to Kalatel mapped alarms
                   ========================================
                                     Kalatel
                                     Site No/
         Input               LocId/  Cmd String            Alarm
Type     Group Id  AlarmId   InpGrpId Index      Task Name  Description
====     ========  =======   =======  ========== =========  =======================
0        54        10        26       -2048      ktd_tty7   Door Forced Ammun Rm 1
0        243       876       294      -1         ktd_tty7   Barrack #2 - Door Held Open
0        8         2         17       23         ktd_tty7   Invalid Badge Front Gate Rdr
0        8         9         94       25         ktd_tty7   Unknown Badge Rdr #4
0        102       21        45       123        ktd_tty5   Boiler Room Thermostat DI
0        65        3         76       345        ktd_tty5
0        85        34        38       406        ktd_tty5   Duress Alarm Rdr #9
```

Exiting the program

If you have made any changes to the mapping file while running <package_prefix>_cctv_map and you select `X` to exit, you will be asked if you want to inform the rest of the system of your changes.

- If you select `y`, then the system is informed of your mapping file changes. The system will re-read the mapping file and use it to determine which alarms will be routed to the CCTV controller. Any existing active alarms will not be re-run through the mapping file, only newly occurring alarms.
- If you are not finished making your changes, but are leaving the <package_prefix>_cctv_map program temporarily, you can enter `n`. This will not inform the Picture Perfect system that the mapping file has been changed.

  However, if Picture Perfect is restarted, the current mapping file is read automatically. In other words, all your changes will be read at that time whether or not you are done with them.

Refer to *Figure 33, Example of exiting the program* on page 69 to see the prompts and messages that display when exiting from the <package_prefix>_cctv_map program.

Figure 33. Example of exiting the program

```
# ktd_cctv_map
**********************************************************************
*                                                                    *
* A) Add a KALATEL CCTV controlled alarm                             *
*                                                                    *
* D) Delete a KALATEL CCTV controlled alarm                          *
*                                                                    *
* P) Print a hardcopy of all KALATEL CCTV controlled alarms          *
*                                                                    *
* X) Exit                                                            *
*                                                                    *
**********************************************************************

 Selection: x

You have made changes to the mapping file.
Do you want to inform the system of these changes: (y/n)? [y]
Sent SIGUSR2 signal to kalatel interface task 'ktd_tty5', pid'22704', on this
host.
Sent SIGUSR2 signal to kalatel interface task 'ktd_tty7', pid'22706', on this
host.
```

Configuring and monitoring alarms in Picture Perfect

There are no special alarms that need to be configured on the Picture Perfect system for the CCTV system. Refer to your *Picture Perfect User Manual* for details on monitoring alarms.

If the optional video loss monitoring/alarm reporting capability has been configured, the input group and alarm definitions will be added dynamically to the Picture Perfect database as needed by the interface software.

Advanced configuration

CCTV systems support an extended configuration that allows you to alter their behavior. This configuration information is kept in the `/cas/db/text/<package>_comm_<ttyN>.cfg` file, where `<package>` is the prefix of the interface package, as specified in *Mapping CCTV monitored events* on page 61, and `ttyN` is the name of the tty port specified for the interface.

The extended configuration information for the video loss interface is kept in the `/cas/db/text/<package>_video_loss_ttyM.ctg` file, where `<package>` is the prefix of the interface package, and `ttyM` is the name of the tty port specified for the video loss interface. These files consist of a series of text lines, each containing a variable name followed by a value or setting.

Note: DO NOT change these files unless absolutely necessary. If you need to change these files, you must be knowledgeable about text editors, such as vi.

Before you begin, please call GE Security Customer Support for assistance.

The following is a sample extended configuration file.

```
#
# ktd_comm_tty4.cfg 1.5
#
# Copyright (C) 1996-2003 GE Interlogix - CASI
# All Rights Reserved.
#
# ktd_comm_tty4.cfg 1.5 4/28/02
#
# This file contains the configuration information for
# the KALATEL CCTV interface via a KTD-312 Computer
# Interface unit.
#
MonitorId                        00
FunctionCodeOn                   [
FunctionCodeOff                  \
#
# The following values are set based on your
# installation responses.
#
PortName                         /dev/tty4
PortBaud                         9600
```

Single device support

To configure a Picture Perfect system to support output of CCTV commands to only one switcher device in response to a single Picture Perfect alarm event, use the `msan.set_single` utility. A sample execution of this utility is provided below.

If multiple switcher devices are installed and Picture Perfect is configured for single device support, a CCTV command is sent to only one of the installed switcher devices in response to a Picture Perfect alarm event. You may want to configure the system in this manner if each alarm event is to be routed to only one CCTV switcher and you require maximum interface performance. A slight performance gain occurs since the switcher device mapping tables do not need to be searched for all matching entries. As soon as the first match is found, the search terminates.

To change the Picture Perfect CCTV switcher device support option to single, perform the following steps:

1. Log in to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set_single` Enter

   The following is a sample output from this command:

   ```
   Querying the tps_daemons table ...

   Updating tps_daemons entry 54
   /cas/bin/msan R A 20030421 175910
   ```

```
statement = UPDATE tps_daemons SET pathname ='/cas/bin/msan', modify_date
='20030423', modify_time ='195449' WHERE id = 54 statement processed OK, 1 rows
affected WHERE id = 54
statement processed OK, 1 rows affected
Successfully update tps_daemons table entry 54
/cas/bin/msan R A 20030421 175910)
```

Multiple device support

The original design of the switcher interfaces supported only a single CCTV switcher device and allowed only one CCTV command to be sent to a switcher in response to a Picture Perfect alarm event. With the introduction of enhanced switcher interfaces, the design was extended to support multiple CCTV switcher devices connected to a single Picture Perfect host system. In addition, any Picture Perfect alarm event can cause output of CCTV commands to multiple switcher devices.

For compatibility with existing systems, the default mode during CCTV switcher interface software installation or upgrade is single device support. You must shut down and restart Picture Perfect for the change to take effect.

Note: If a new CCTV switcher interface is installed or you are upgrading an existing CCTV switcher interface, and you were previously using the multiple device support feature, you must re-activate the multiple device support feature after installation.

To configure a Picture Perfect system to support output of CCTV commands to multiple switcher devices in response to a single Picture Perfect alarm event, use the `msan.set_multiple` utility. A sample execution of this utility is provided below.

Note: You should configure the Picture Perfect software for multiple device support only if CCTV commands are to be routed to more than one switcher device for an alarm event. There is a slight performance penalty for this configuration as the switcher device mapping tables must be fully searched to find all matches indicating the routing of a CCTV command for the specific alarm event.

To change the Picture Perfect CCTV switcher device support option to multiple, perform the following steps:

1. Log in to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set_multiple` Enter

The following is a sample output from this command:

```
Querying the tps_daemons table ...

Updating tps_daemons entry 54
/cas/bin/msan R A 20030421 175910
statement = UPDATE tps_daemons SET pathname ='/cas/bin/msan -m', modify_date
='20030423', modify_time='195449' WHERE id = 54 statement processed OK, 1 rows
affected WHERE id = 54
statement processed OK, 1 rows affected
Successfully update tps_daemons table entry 54
/cas/bin/msan R A 20030421 175910)
```

Interface data file backup and restore

The CCTV interface software requires several data files for its operation. These files are created during the software installation process and are summarized in *Table 4*.

Normal use of the interface software may result in changes to one or more of these files. A backup should be done on a regular basis. A good practice is to do it at the same time that the Picture Perfect database is backed up.

The CCTV software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the CCTV interface.

Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 4. CCTV interface data files

Data file name	Description
`/cas/db/text/<package>_comm_*.cfg`	TTY port extended configuration definition file (* is the port name, such as, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/<package>_video_loss_*.cfg`	Video loss tty port extended configuration definition file (* is the port name, such as `tty2` for AIX, `ttyD002` for Linux).
`/cas/db/text/<package>.redundant.cfg`	CCTV redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.
`/cas/db/text/<package>.map`	Alarm map file that maps Picture Perfect alarm events to CCTV alarm numbers as described in *Mapping CCTV monitored events* on page 61.

Appendix C Configuring a Central Station interface

This appendix provides information on configuring the Central Station interface which provides a communication mechanism between Picture Perfect and central monitoring systems that allows control of activities for multiple systems and both local and remote sites from a single location.

In this appendix:

Introduction

The Central Station interface provides a communication mechanism between Picture Perfect and central monitoring systems that allows control of activities for multiple systems and both local and remote sites from a single location. The interface supports the ABM Data Systems, Inc. and Monitoring Automation Systems (MAS) Central Station products. Once Picture Perfect and Central Station interface systems are set up and configured, alarm notifications are routed from Picture Perfect to the Central Station system for handling. This allows monitoring and response to activities from the Central Station system.

The first step is to set up the Picture Perfect system and configure the Central Station system for a new receiver, or verify set up if this is an existing system. Refer to the Central Station system product documentation for configuration information. Next, specify to the Central Station interface which alarms are to be routed to the Central Station system. After this has been accomplished, alarm notification events will be routed from Picture Perfect to the Central Station system automatically without operator intervention.

Detailed information, on the specifics of the Central Station interface and the tool that is used to specify which alarms are to be routed to the Central Station system, is provided in *Configuration* on page 76. It is strongly recommended that this section be read before installing the Central Station interface software.

The Central Station interface to Picture Perfect can exist in standalone, subhost and network host versions of Picture Perfect. It is not available for Redundant Picture Perfect systems due to the single serial connection between the Picture Perfect host and Central Station system. In all applications there is a one-to-one correspondence between Picture Perfect and a Central Station system receiver port. You will not be able to connect all subhosts in a network to a single Central Station system receiver port. Each subhost must interface with its own Central Station system receiver port.

Software requirements

- Picture Perfect Base (`base`) package
- Picture Perfect Central Station interface (`cstation`) package

Hardware requirements

The following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

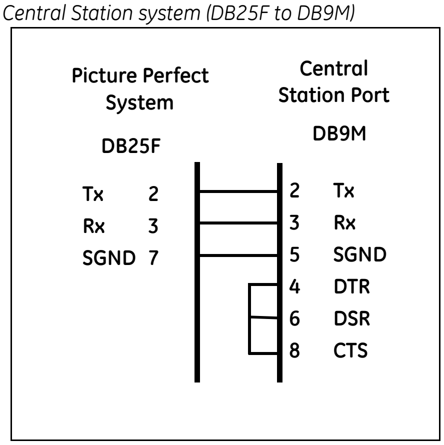
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Central Station communication program is started.

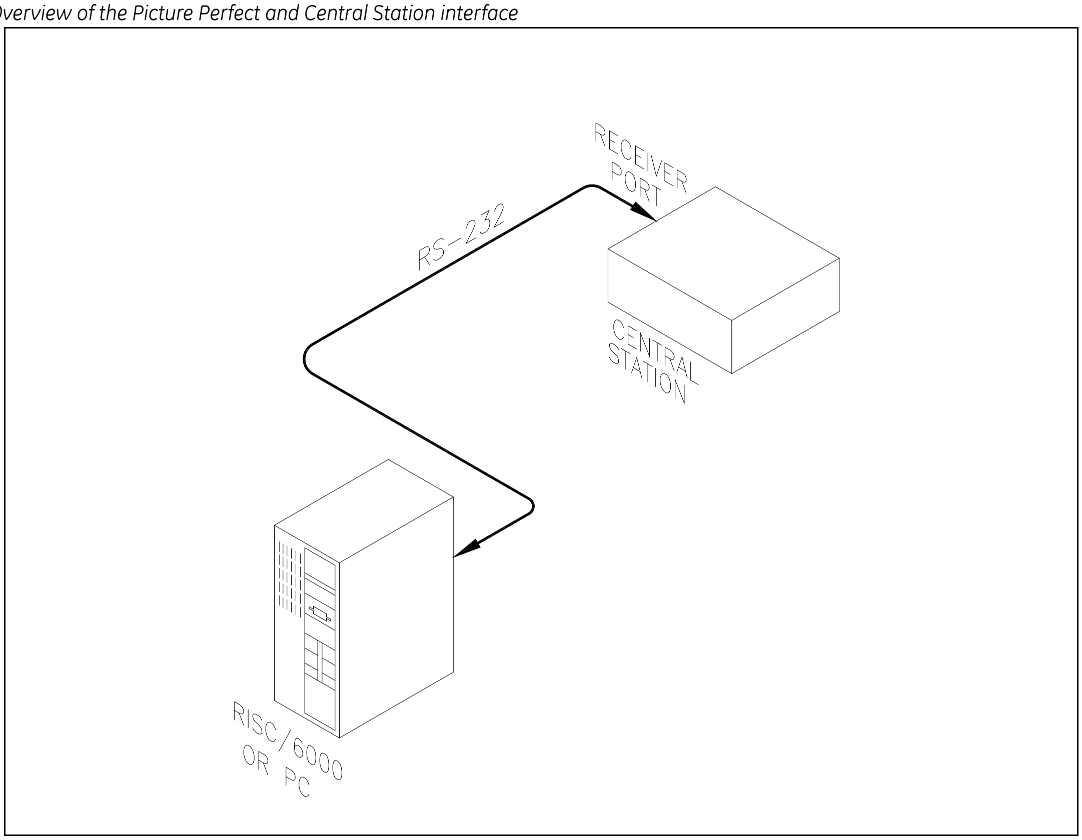
- Cable to connect the Picture Perfect system to the Central Station port (See *Figure 34*).

Figure 34. Cable Pinouts: Picture Perfect host to Central Station system (DB25F to DB9M)



Note: This cable configuration is for a PC-based version of the Central Station system using the COM1 or COM2 serial port for communications. Refer to your Central Station system documentation for cable specifications.

Figure 35. Overview of the Picture Perfect and Central Station interface



Configuration

The Picture Perfect Central Station interface allows forwarding of alarm events to the Central Station system for handling by the Central Station operator. Before this can happen, Picture Perfect must be informed of which alarm events are to be forwarded, and how to identify them in a manner recognizable by the Central Station system.

An alarm event is a collection of information which includes an Input Group ID, an Alarm ID, and an Input ID. These ID values identify specific records in the Picture Perfect database describing the alarm. The Central Station system requires an account number designation for all inputs. This information must be provided to Picture Perfect so it can correctly identify events for the Central Station system. After the Picture Perfect database has been populated, you can identify the alarms events to be forwarded to the Central Station system through the use of the `cstgen` tool described below.

For a successful configuration, follow these steps:

1. Create alarms in Picture Perfect for any alarm events that may occur.
2. Create a valid account table file to map Picture Perfect Micro ID numbers to Central Station system account numbers.
3. Create input files to describe the alarm notification events to be forwarded to the Central Station system.
4. Run the `cstgen` tool to validate the input file and to create a map file for the Picture Perfect Central Station interface that defines the alarm events to be forwarded to the Central Station system.

Creating Picture Perfect alarms

The Picture Perfect software uses a comprehensive set of database tables to define the objects and relationships between them which implement the customer's specific security solution. The `cstgen` tool accesses a subset of this information as defined in *Table 5*. Database table objects are identified and related to one another through the use of Record ID numbers. Each database table record has a Record ID number unique to that specific table type (but not unique to all table types; for instance, each table type has Record ID numbers starting at 1). See the *Picture Perfect User Manual* for information on the relationship between the tables and how to enter information using the graphical user interface.

When populating the Picture Perfect database tables, it is important to define the objects in a manner that uniquely identifies the alarm events that may occur. This is especially important in cases where objects (typically input groups) can be shared, since Record ID numbers are not unique across table types. The `cstgen` tool analyzes the object definitions and relationships in the Picture Perfect database tables to extract information defining the alarm events that are to be forwarded to the Central Station. Unique identifying information is required for each alarm event to be forwarded and excessive sharing can impact on this uniqueness. There are some general guidelines that should be followed when defining objects in the database as described below. In general, sharing of object definitions should be done on a limited basis with directly related objects.

The following rules should be followed when defining objects in the Picture Perfect database to ensure uniqueness in identifying alarm events:

1. When defining an area, micro, or door object, it is permissible to share a single input group (and hence the alarm indicated by that input group) within that object, but the alarm cannot be used by any other input group and the input group cannot be used by any other object.
2. Input groups should not be shared by records of different database table types.
3. Alarms should not be shared by records of different database table types.
4. When alarms are defined, they must be routed to the Alarm Monitor in order for them to be forwarded to the Central Station system.
5. The safest course to follow when defining Picture Perfect database tables is to use different input groups and alarms for each type of alarm event for each type of object.

Table 5. Database tables referenced by the cstgen tool

Table	Field Name	Description
micro	id	micro record number
	micro_id	micro id number
	bdghis_ingrp	badge history overflow input group record number
	almhis_ingrp	alarm history overflow input group record number
	upstrm_comm_ingrp	upstream micro communication failure input group record number
	dnstrm_comm_ingrp	downstream micro communication failure input group record number
	reader_comm_ingrp	reader failure input group record number
reader	id	reader record number
	area	area record number
door	id	door record number
	door_input	door sensor input record number
	forced_open_ingrp	door forced open input group record number
	open_too_long_ingrp	door held open input group record number
area	id	area record number
	inv_input_grp	invalid badge read input group record number
	susp_input_grp	suspended badge read input group record number
	lost_input_grp	lost badge input group record number
	unk_input_grp	unknown badge read input group record number
	apb_input_group	anti-passback violation input group record number
	duress_input_group	duress input group record number

Table 5. Database tables referenced by the cstgen tool (continued)

Table	Field Name	Description
input_group	id	input group record number
	alarm	alarm record number
input	id	input record number
	input_group	input group record number
alarm	id	alarm record number
host [1]	id	host record number
	hcomm_ingrp	host communication failure input group record number

1. Host information is present only in an enterprise (networked) Picture Perfect configuration.

Assigning account numbers

The Central Station interface requires that alarm notification messages contain an account number. This account information is specific to the Central Station system and not a part of the Picture Perfect system. The Picture Perfect to Central Station interface software uses an accounts table to define the account numbers required by the Central Station system. This table, contained in the file `/cas/db/text/cstation_accounts.table`, provides a Central Station account number for each Picture Perfect micro defined in the Picture Perfect database. The table must be created prior to using the `cstgen` tool and should be updated whenever new micros are defined in the Picture Perfect database.

The accounts table file can be created using any text editor. An empty table file is created during installation of the Picture Perfect to the Central Station interface software. It is only necessary to add records to this table for those micro's whose alarm events are to be forwarded to the Central Station system. A record consists of the Picture Perfect Micro ID number (not the micro entry database record number) and the corresponding Central Station system account number separated by a vertical bar (pipe |) with no intervening spaces. The Micro ID numbers can be determined through the Picture Perfect user interface by executing the CSTATION Micros SQL report as described in the section *Running the reports* on page 81. Valid account numbers are 1 to 9998. Account number 9999 is reserved for host-to-host communication failure alarms which are independent of micros.

Use the utility `cstgen.Validate_Accounts_Table` to verify the contents of the accounts table. It scans the entries in the accounts table and verifies that the specified Micro ID values are defined in the Picture Perfect database and that the account numbers are within the proper range. Invalid records are pre-pended with a pound sign (#) character (which converts them into comment lines) and an error message is appended to the end of the line. The invalid lines can then be corrected and the utility re-executed until all lines have been validated. Remember to remove both the pound sign (#) and the error message before re-executing the utility. Note that you must have `root` permission to execute the `cstgen.Validate_Accounts_Table` utility.

Creating an input file

An input file is required when using the `cstgen` tool. It describes the alarm notification events to be forwarded to the Central Station system as described in *Picture Perfect output to the Central Station system* on page 87. The input file is a text editable file that must be created prior to running the `cstgen` tool. During the Picture Perfect to Central Station interface installation process, the protected input file `/cas/db/text/cstation.input` is created. This file should never be edited directly. Instead, copy it to another directory (preferably with a different name) and edit the copy to add or remove records as desired. During processing of the copied file, the `cstgen` utility will construct and install a new protected copy of the `/cas/db/text/cstation.input` input file (the previous version will be saved as a backup). The format and rules for the structure of the input file are discussed in the following sections. See the file `/cas/db/text/cstation_input.sample` for an example of how to populate the input file.

What you need to know to create an input file

1. The types of alarm events for which alarm notifications are to be forwarded to the Central Station system for each type of Picture Perfect database object.
2. The database Record ID numbers corresponding to the Picture Perfect database objects for which alarm notifications are to be forwarded to the Central Station system.

Once an alarm has been forward to and accepted by the Central Station system, it will be removed from the Picture Perfect **Alarm Monitor** screen. Picture Perfect will then assume that the operator has seen and acknowledged the alarm. Only forward those alarm events that are to be handled by the Central Station system.

Selecting Picture Perfect alarm events for Central Station

There are several types of alarm events for which alarm notifications can be forwarded to the Central Station system as described in *Table 6, Forwardable alarm notification events*. The table identifies for each type of alarm event, the event name and the Picture Perfect database table whose Record ID number is used in the `cstgen` tool input file. The Record ID numbers of populated database tables can be obtained by executing the SQL report whose name is provided in the right-most column of the table under the heading SQL Report Name.

Table 6. Forwardable alarm notification events

Alarm Event Description	Alarm Event Name	Database Table	SQL Report Name
Door Held Open	DoorHeld	door	CSTATION DoorHeld
Door Forced Open	DoorForced	door	CSTATION DoorForced
Invalid Badge Read	InvBadge	reader,	CSTATION InvBadge
Suspended Badge Read	SuspBadge	reader	CSTATION SuspBadge
Lost Badge Read	LostBadge	reader	CSTATION LostBadge
Unknown Badge Read	UnkBadge	reader	CSTATION UnkBadge
Anti-Passback Violation	APBBadge	reader	CSTATION APBBadge
Duress Violation	DurBadge	reader	CSTATION DurBadge
Reader Failure	ReaderFail	reader	CSTATION ReaderFail

Table 6. Forwardable alarm notification events

Alarm Event Description	Alarm Event Name	Database Table	SQL Report Name
Upstream Communication Failure	UpStream	micro	CSTATION UpStream
Downstream Communication Failure	DownStream	micro	CSTATION DownStream
Alarm History Overflow	AlmHistOvfl	micro	CSTATION AlmHistOvfl
Badge History Overflow	BdgHistOvfl	micro	CSTATION BdgHistOvfl
Host Communication Failure [1]	HostComm	host	CSTATION HostComm
DI Board Input Point	DIPoint	input	CSTATION DIPoint

1. Available only in enterprise (networked) Picture Perfect configurations

Input file format

The `cstgen` tool's input file consists of optional comment lines, denoted by a leading pound sign (#) character, followed by data lines specifying the alarm events to be forwarded to the Central Station system. Each data line consists of an alarm event name taken from *Table 6* on page 79 followed by one or more Picture Perfect database Record ID numbers in the following format:

```
<alarm_event_name>|<record_id_#1>|<record_id_#2>|...|<record_id_#n>
```

where the delimiter character between fields is the vertical bar (pipe |). No spaces can be present within a data line. If there are more Record ID numbers than can easily fit on the data line, another data line can be started with the same alarm event name. The data lines can be present in any order in the input file. When the `cstgen` tool constructs the protected file `/cas/db/text/cstation.input`, it automatically sorts and packs the information into the minimum number of data lines required.

You can obtain the Record ID numbers for each event name by executing the corresponding SQL report as indicated in *Table 6* on page 79.

Note: There is a different report for each alarm event type. The Record ID numbers are always shown as the first (left-most) column of the SQL report as described below.

Example input file

The following is an example of an input file for the `cstgen` tool. Note that the comments in parentheses which are provided for explanation are NOT part of the input file.

```
# Central Station Input File - Last Updated 06/18/96 @ 09:00
DoorHeld|1|3          (door held open alarm for doors 1 and 3)
DoorForced|9          (door forced open alarm for door 9)
InvBadge|1|2          (invalid badge read alarm for readers 1 and 2)
APBBadge|3            (anti-passback violation alarm for reader 3)
ReaderFail|1|2|3      (reader failure alarm for readers 1, 2 and 3)
BdgHistOvfl|1         (badge history overflow alarm for micro 1)
DIPoint|1|2|3         (20 DI board alarms for inputs 1,2 and 3)
```

Using SQL reports to populate the input file

The relationship between the Picture Perfect database tables which define the various alarm event types can be quite complex. All fields must be appropriately defined before alarm event forwarding can occur. SQL reports are provided with the Central Station interface software to assist in the verification of the database population and to provide the information required for the cstgen tool input file. These reports were added to the Picture Perfect database during installation of the software.

There are a total of twenty SQL reports: fifteen reports to identify Record ID numbers for use with the `cstgen` tool input file and five reports for assessing missing information in the database tables. When using a report to determine valid Record ID numbers for the input file, use the numbers in the first (left-most) column. If an entry is missing from the report (for example, if three micros are defined but only two are listed), it is due to a missing database table field that is required for proper identification of the alarm event. Use one or more of the five debugging reports to determine which field is missing. One of these five reports may also be used to determine the Micro ID values for populating the accounts table file described earlier.

Running the reports

Follow these steps with the Picture Perfect user interface to run the reports:

1. From the Reports menu, select the Report menu item, then click the Report tab.
2. From the **Select a Report Category** list pane, select the category for this report. When you select a category, the existing reports in that category display in the **Select a Report** list pane.
3. To open an existing report, select it from the **Select a Report** list pane, then from the toolbar, click **Run**.
4. You can open any of the fifteen reports listed in *Table 6* on page 79 or any of these five debugging reports:
   - CSTATION Micros
   - CSTATION Doors
   - CSTATION Readers
   - CSTATION Alarms
   - CSTATION Inputs

Examples of how to use the reports are described below.

Sample reports

For example, you want to route badge history overflow alarm events for the three micros installed on the system to the Central Station.

1. Run the CSTATION BdgHistOvfl report.

   The following report is displayed:

```
08/27/96 15:29
                                CSTATION BdgHistOvfl
MICRO_REC  MICRO_ID   MICRO_DESCRIPTION  BDGHIS_INGRP  ALARM_ID  INPUT_GROUP_DESC           ALARM_DESCRIPTION

1          0          MICRO 0 i1a-1      8             11        BADGE HISTORY OVERFLOW     BADGE HISTORY OVERFLOW
2          1          MICRO 1 i1a-2      8             11        BADGE HISTORY OVERFLOW     BADGE HISTORY OVERFLOW
```

From the output you see only two of the three micros are listed, indicating a problem with the definition of that micro.

2. Run the CSTATION Micros report.

   The following report is displayed:

```
08/27/96 15:30
CSTATION Micros
MICRO_REC MICRO_DESCRIPTION  MICRO_ID  DNSTRM_COMM_INGRP  UPSTRM_COMM_INGRP  BDGHIS_INGRP ALMHIS_INGRP    READER_COMM_INGRP
---------------------------------------------------------------------------------------------------------------------------
1         MICRO0i1a-1        0         9                  7                  8            12              10
2         MICRO1i1a-2        1         9                  7                  8            12              13
3         MICRO2i1a-3        2         2                  9                  -1           -1              11
```

From the output you see that in the definition of the third micro, the badge history overflow input group was improperly defined, as it had a value of -1. Record ID numbers must be greater than zero. This problem should be corrected by following the procedures to define or update micro records in the database as described in the *Picture Perfect User Manual*.

Note: The alarm history overflow input group was also not properly defined and must be corrected.

The CSTATION Micros report can be used to provide information to populate the accounts table. The third column of the report, MICRO_ID, identifies the Micro ID values for which corresponding Central Station account numbers should be defined. There should be an entry in the accounts table for every Micro ID value listed in the report.

Suppose that when looking at the micros report, all of the Input Group ID numbers (as indicated by the fields whose label ends with _INGRP) were properly defined. This indicates that one or more of the input groups does not have an alarm defined. To determine which input group has the problem do the following:

3. Run the CSTATION Alarms report.

   The following report is displayed.

```
CSTATION Alarms
INPUT_GROUP_ID       INPUT_GROUP_DESC                ALARM_ID
-------------------------------------------------------
1                    DOOR HELD OPEN                  1
2                    DOOR FORCED OPEN                2
3                    INVALID BADGE                   3
4                    LOST BADGE                      4
5                    SUSPENDED BADGE                 5
6                    UNKNOWN BADGE                   6
7                    HOST TO MICRO COMM FAIL         7
8                    BADGE HISTORY OVERFLOW          8
9                    DOWNSTREAM MICRO COMM FAIL      9
10                   M0 READER COMM FAIL             10
11                   APB BADGE VIOLATION             -1
12                   ALARM HISTORY OVERFLOW          12
13                   M1 READER COMM FAIL             13
```

From the output you see two of the input groups (8 and 11) do not have valid Alarm IDs which means that the alarms were not properly defined. This problem should be corrected by following the procedures to define or update `input_group` and `alarm` records in the database as described in the *Picture Perfect User Manual*.

To determine which debugging report to use for a specific alarm event type, refer to *Table 6* on page 79. For each alarm event type given in the first column (labelled Alarm Event Description), the third column (labelled Database Table) identifies the corresponding debugging report. For database table, door, use report CSTATION Doors. For database table, reader, use report CSTATION Readers. For database table, micro, use report CSTATION Micros. Finally for database table, inputs, use report CSTATION Inputs. The debugging report, CSTATION Alarms, is used to check the input groups for all alarm event types.

Running the cstgen tool

The following conditions must be true in order to run the `cstgen` tool:

- The Picture Perfect database must be operational.
- A valid account table file must have been created to map Picture Perfect Micro ID numbers to Central Station system account numbers.
- An input file must have been created containing event names and database Record ID's defining the alarms that are to be forwarded to the Central Station.

Follow these steps to invoke the cstgen tool:

1. Login as `root` or become `root` by using the `su - root` command.
2. Change to the directory where the input file is located.
3. To establish the proper environment that provides access to the `cstgen` tool and the Picture Perfect database, type: `./cas/bin/profile` Enter
4. Type: `cstgen` Enter

A typical execution sequence is as follows:

```
cstgen Central Station Data Generator v1.0
Enter name of input file or <CR> to exit: my.input
Processing summary will be written to file cstgen.log
Validating input file records ...
completed
Extracting Picture Perfect Database Information ...
completed
Loading Picture Perfect Database Information ...
completed
Processing input file records ...
* BdgHistOvfl 1 - Error. Micro Badge History Overflow input group not defined
BdgHistOvfl 2 - Good. Map entry 0 2 2 99 525021099 cstation_comm
DoorForced 1 - Good. Map entry 0 75 20 22 525041022 cstation_comm
Saving /cas/db/text/cstation.map as /cas/db/text/cstation.map.old
Creating new map file /cas/db/text/cstation.map
Saving /cas/db/text/cstation.input as /cas/db/text/cstation.input.old
Creating new data file /cas/db/text/cstation.input
A new map file /cas/db/text/cstation.map has been created
Do you want to inform the system to use the new file: (y/n)? y
Sending signal USR2 to task msan...
Invalid records were saved in file cstation.input.bad
Saved input file my.input as my.input.processed
A log of this run was saved in file cstgen.log
```

In the previous example, one error was detected and flagged by the asterisk (*) character when attempting to route the Badge History Overflow alarm for Micro ID number 1 to the Central Station system. A more detailed error message is contained in the `cstgen.log` log file indicating the database record or field that is incorrect or missing. For this particular error, no input group was assigned for the Badge History Overflow alarm event type for the specified micro. The Picture Perfect database should be corrected to include this definition and the `cstgen` tool should then be re-executed. See the discussion earlier in this chapter on using SQL reports to identify missing database information.

Advanced configuration

The Central Station interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the `/cas/db/text/cstation_comm_ttyN.cfg` file, where `ttyN` is the name of the tty port specified for the interface. The file consists of a series of text lines, each containing a variable name followed by a value or setting.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is the contents of the extended configuration file:

```
#
# /cas/db/text/cstation_comm_tty2.cfg
# Copyright (C) 1996 - 2003 GE Interlogix - CASI
# All Rights Reserved.
# cstation.inst 1.0 06/03/03
#
# This file contains the configuration information for the Central
# Station interface.
# These values are setup at installation, and are permanent!
# DO NOT touch these lines.
#
RemoteConnAlarm        439
RemoteConnInGrp        348
#
# The following values are setup based on your installation responses.
#
PortName               /dev/tty2
PortBaud               1200
CharacterSize          7
Parity                 o
StopBits               2
XonXoff                y
ReceiverId             01
LineId                 01
MaxRetries             3
RetryWait              5
```

Multiple device support issues

The original design of the switcher interfaces supported only a single CCTV switcher device and allowed only one CCTV command to be sent to a switcher in response to a Picture Perfect alarm event. With the introduction of enhanced switcher interfaces, the design has been extended to support multiple CCTV switcher devices connected to a single Picture Perfect host system. In addition, any Picture Perfect alarm event can cause output of CCTV commands to multiple switcher devices. Two utilities are provided to turn the multiple device feature on or off. These are described below. For compatibility with existing systems, the default mode during CCTV switcher interface software installation or upgrade is single device support. You must shut down and restart Picture Perfect for the change to take effect.

Note: If a new CCTV switcher interface is installed or you are upgrading an existing CCTV switcher interface, and you were previously using the multiple device support feature, you must re-activate the multiple device support feature after installation.

Multiple device support

To configure a Picture Perfect system to support output of CCTV commands to multiple switcher devices in response to a single Picture Perfect alarm event, use the `msan.set_multiple` utility. A sample execution of this utility is provided below.

Note: You should configure the Picture Perfect software for multiple device support only if CCTV commands are to be routed to more than one switcher device for an alarm event. There is a slight performance penalty for this configuration as the switcher device mapping tables must be fully searched to find all matches indicating the routing of a CCTV command for the specific alarm event.

To change the Picture Perfect CCTV switcher device support option to multiple, perform the following steps:

1. Log on to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set_multiple` Enter

   The following is a sample output from this command:

```
Querying the tps_daemons table ...

Updating tps_daemons entry 54
/cas/bin/msan R A 20030421 175910
statement = UPDATE tps_daemons SET pathname ='/cas/bin/msan -m', modify_date
='20030423', modify_time='195449' WHERE id = 54 statement processed OK, 1 rows
affected WHERE id = 54
statement processed OK, 1 rows affected
Successfully update tps_daemons table entry 54
/cas/bin/msan R A 20030421 175910)
```

Single device support

To configure a Picture Perfect system to support output of CCTV commands to only one switcher device in response to a single Picture Perfect alarm event, use the `msan.set_single` utility. A sample execution of this utility is provided below. Note that if multiple switcher devices are installed and Picture Perfect is configured for single device support, a CCTV command will be sent to only one of the installed switcher devices in response to a Picture Perfect alarm event. You may want to configure the system in this manner if each alarm event is to be routed to only one CCTV switcher and you require maximum interface performance. A slight performance gain occurs since the switcher device mapping tables do not need to be searched for all matching entries. As soon as the first match is found, the search terminates.

To change the Picture Perfect CCTV switcher device support option to single, perform the following steps:

1. Log on to the system as `root`.
2. Enter the command: `. /cas/bin/profile` Enter
3. Enter the command: `. /cas/bin/msan.set_single` Enter

   The following is a sample output from this command:

```
Querying the tps_daemons table ...


Updating tps_daemons entry 54
/cas/bin/msan R A 20030421 175910
statement = UPDATE tps_daemons SET pathname ='/cas/bin/msan', modify_date
='20030423', modify_time ='195449' WHERE id = 54 statement processed OK, 1 rows
affected WHERE id = 54
statement processed OK, 1 rows affected
Successfully update tps_daemons table entry 54
/cas/bin/msan R A 20030421 175910)
```

Interface data file backup and restore

The Central Station interface software requires several data files for its operation. These files are created during the software installation process and are summarized in *Table 7* below. Normal use of the interface software may cause changes to one or more of these files. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Central Station interface installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Central Station interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 7. Central Station interface data files

Data file name	Description
`/cas/db/text/cstation_comm_*.cfg`	TTY port extended configuration definition file (* is the port name, e.g. `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/cstation.map`	Alarm map file that defines the Picture Perfect alarm events to be forwarded to the Central Station system.
`/cas/db/text/cstation.input`	Protected input file used to create the `cstation.map` file.
`/cas/db/text/cstation_accounts.table`	The file defining Central Station system account numbers corresponding to Picture Perfect micro IDs.

Picture Perfect output to the Central Station system

The Picture Perfect to Central Station System interface is generic and is recognizable by any Central Station system that accepts SIA formatted data. ABM Data Systems and Monitoring Automation Systems (MAS) have been targeted as two candidates for the Central Station interface initial implementation.

Picture Perfect:

- Acts as a receiver of incoming alarms.
- Processes selective types of data (such as card and administrative maintenance on the Micro/5 intelligent field panels).
- Reformats alarm information into the industry accepted standard SIA format.
- Outputs the SIA formatted data.

Picture Perfect's primary roles are to offer the functionality of card access control and to output alarm information in standard format to the Central Station system. The Picture Perfect to Central Station interface supports a single Central Station system connection per Picture Perfect host computer.

Interface port requirements

The connection between Picture Perfect and the Central Station system conforms to the EIA standards for RS-232 serial communications. The communication port must be set up to operate at 1200 baud, 7 data bits, odd parity, Xon/Xoff control enabled, and 2 stop bits in the SIA mode, emulating a Radionics D6500 Security Receiver (Radionics D6500 Security Receiver, 6500:MPU 07.00 Program Entry Guide, 1993). This interface will require one serial port from the Picture Perfect system. The serial port can be any serial port on a multi-port Asynchronous Adapter EIA-232. The interface requires one receiver port be configured on the Central

Station system. The line and received ID information for the receiver port and the communication parameter information above are required for installation of the Central Station interface software.

Interface design and operation

Picture Perfect will communicate with the Central Station system whenever an alarm condition has been detected or reset. When the Picture Perfect host receives an incoming alarm condition that matches with predefined alarms in the Picture Perfect database, the interface will generate an outgoing message for the Central Station system that consists of an account number, event code, and Device ID. This outgoing message will be generated in SIA format. Similarly, when Picture Perfect detects an alarm reset condition, it will generate another outgoing message in SIA format. The `cstgen` utility program, described in the section *Configuration* on page 76, allows the operator to specify which Picture Perfect alarms are to be routed to the Central Station system.

Picture Perfect will act as a "formatting agent" of incoming alarm events for transfer to the Central Station system. Upon successful transfer of an alarm event, it will be removed from the Picture Perfect runtime database and Alarm Monitor. This approach guarantees that operator notification and alarm response is handled by only one system. Those alarm events not designated for transfer to the Central Station system will be handled normally by Picture Perfect.

Note: For logical alarms, removal of the alarm event from the Alarm Monitor screen is immediate. For physical alarms, the alarm event remains on the Alarm Monitor screen as an operator acknowledged (pending) event, until the condition causing the alarm has reset. See below for a discussion of logical and physical alarms.

Alarm event triggering of SIA message output

There are currently five main types of input events in Picture Perfect. These input events trigger alarm messages which may be logged, displayed on a monitor, printed or formatted into SIA messages for transfer to the Central Station system. The five input types listed below cause logical alarms unless specifically indicated as physical alarms.

1. Input events for a micro

   Badge History Overflow (physical alarm)

   Alarm History Overflow (physical alarm)

   Upstream Communication Failure

   Downstream Communication Failure

   Reader Communication Failure (physical alarm)

2. Input events for an area

   Invalid Badge

   Unknown Badge

   Lost Badge

   Suspended Badge

   Anti-passback Violation

   Duress

3. Input events for a door

    Door Held Open (physical alarm)

    Door Forced Open (physical alarm)

4. Picture Perfect system events

    Host-host communications failure

5. 20 DI Board alarm events

    DIPoint (physical alarm)

Logical alarms are one-time events without any specific duration time. Picture Perfect will generate one SIA formatted message for transfer to the Central Station system whenever an event of this type occurs.

Physical alarms are events with a duration. The condition occurs and remains in effect until some future time when the condition is finally removed. Picture Perfect will generate two SIA formatted messages for transfer to the Central Station system whenever an event of this type occurs. The first message will be generated and transferred when the condition first occurs and the second when the condition is removed.

SIA message packet format

The SIA message packet format between two communicating devices (typically called the receiver and the computer) provides two way communication with sequenced message acknowledgment. The format has the general form:

```
<LF><CRC><HT><seq><rec><line>[<data>]<CR>
```

The minimum allowable message form is:

```
<LF><CRC><HT><seq><rec><line>[]<CR>
```

Messages always begin with the flag character `<LF>`, Cyclic Redundancy Check `<CRC>` field and the `<HT>` horizontal tab character. The sequence number <seq>, receiver <rec> and line <line> fields follow next. The beginning data delimiter character `[` follows. The `<data>` field characters are all in the ASCII printable range, decimal 32 to decimal 126. Multiple data blocks within the `<data>` field are separated by the data field separator (`|`), for example, `[block1|block2]`. The ending data delimiter `]` is used after the last data block. The message ends with a carriage return `<CR>` character.

The packet Cyclic Redundancy Check field is a 6 byte ASCII hex string. It is calculated the same way for both receiver messages and computer responses. It incorporates two different error detection schemes, packet summing and column parity. The packet CRC occupies digits 1 and 2, the column parity occupies digits 3 and 4, and the size is placed in digits 5 and 6. Refer to the Appendix of the “SIA Computer Interface Standard, 1990” document for implementation details on the CRC.

The Receiver `<rec>` and Line `<line>` fields are both two character ASCII text strings. Valid characters in these strings are 0 through 9 and A through Z. If not used, they should be set to `00`. The Sequence Number `<seq>` field is a four character ASCII text string. The four ASCII characters represent a 16 bit BCD value that increments with each unique message packet. Allowable values are 0001 to 9999. The value 9999 is succeeded by the value 0001. Picture Perfect will increment the sequence number when one of the following conditions occurs:

1. A valid acknowledgment from the Central Station system has been received
2. A communications fault has been detected and the message has been resolved by an operator.

The main body of the message is the <data> field, and this portion of the message has the largest amount of variability. See *Table 8* on page 91 for a full list of messages, event codes, and corresponding message formats supported by this interface.

The size of the entire message packet is limited to 128 characters.

The Central Station system is expected to respond to Picture Perfect with a positive acknowledgment response packet. Since Picture Perfect can send up to eight messages without acknowledgments (per the SIA standard), the Central Station system must indicate (using the sequence number field) to which message the response applies. Response packets from the Central Station system take the general form:

```
<LF><CRC><HT><seq><rec><line>[]<CR>
```

If the Central Station system cannot interpret a message received from Picture Perfect, it sends a negative acknowledgment response packet where the sequence number field <seq> has the special value 0000.

Interface specific message packet format

The message packets sent from Picture Perfect to the Central Station system contains an account number, event code and device identification in the <data> field portion of an SIA formatted packet. The format of this field is as follows:

```
[#aaaa|PPdata]
```

aaaa is the 4 byte ASCII communicator's account number, 0000 through 9999

PPdata contains event code and device identification

Each Picture Perfect input type corresponds to an SIA event code (see *Table 8* on page 91). When an alarm event is detected, Picture Perfect determines which micro caused the event and uses that information to determine the account number from a site-configurable table.

The message packets sent from the Central Station system to Picture Perfect contains an empty <data> field []. The Sequence Number <seq> field is 0000 for a negative acknowledgment and 0001 through 9999 for a positive acknowledgment.

Example:

```
<LF><CRC><HT>00010203[#1234|Npi123CJ]<C>     <- Message to Central Station
      <LF><CR><HT>00010203[]<CR>             <- Response from Central Station
```

line number (03)

receiver number (02)

sequence number (0001)

This response indicates positive acknowledgment of message receipt.

Communications failures

Communication with the Central Station system is a two way process. The Picture Perfect system sends messages to the Central Station and the Central Station receives, processes, and sends a response back to Picture Perfect. Picture Perfect will re-transmit a message if it receives a NAK response with a 0000 sequence number. The maximum number of retries and the delay time (in seconds) between re-transmissions is configurable at the customer site during software installation.

Message processing

The Picture Perfect host computer will communicate with the Central Station system whenever an alarm is activated or deactivated (that is, using micros). Upon detecting that an alarm has been activated or deactivated, Picture Perfect will format a message and send it to the Central Station system. Picture Perfect will only send `N` type (new, real-time) messages.

Based on the SIA standard for event block data code definitions ("SIA Digital Communication Standard, 1993") and discussions concerning the types of events or "incidents" likely to trigger an alarm in Picture Perfect, the following table was derived which lists the SIA supported event codes and their format:

Table 8. SIA messages, event codes, corresponding message formats, and Picture Perfect alarms

Message	Event code	Data field portion of SIA message	PP alarm/device type
Open and Close Messages			
Late to Close	CJ	[#*aaaa*|Npi*ddd*CJ]	Door held open/door
Access Messages			
Access Denied	DD	[#*aaaa*|Npi*ddd*DD]	Unknown badge/reader OR Invalid badge/reader
Door Forced	DF	[#*aaaa*|Npi*ddd*DF]	Door forced open/door
Access Lockout	DK	[#*aaaa*|Npi*ddd*DK]	Suspended badge/reader
Access Trouble	DT	[#*aaaa*|Npi*ddd*DT]	Lost badge/reader
Alarm Messages			
Holdup Alarm	HA	[#*aaaa*|Npi*ddd*HA]	Duress/reader
Tamper Alarm	TA	[#*aaaa*|Npi*ddd*TA]	Antipassback violation/reader
Relay Open Alarm	TA	[#*aaaa*|Npi*ddd*RO]	DI Point alarm/input
Other Messages			
Log Threshold	JL	[#*aaaa*|Npi*ddd*JL]	Badge history overflow/micro
Log Overflow	JO	[#*aaaa*|Npi*ddd*JO]	Alarm history overflow/micro
Line Trouble	LT	[#*aaaa*|Npi*ddd*LT]	Upstream comm fail/micro
Remote call failed	RA	[#*aaaa*|Npi*ddd*RA]	Downstream comm fail/micro
Remote prog fail	RU	[#*aaaa*|Npi*ddd*RU]	Reader comm fail/reader

Table 8. SIA messages, event codes, corresponding message formats, and Picture Perfect alarms (continued)

Message	Event code	Data field portion of SIA message	PP alarm/device type
Comm fail	YC	[#*aaaa*|Npi*ddd*YC]	Host-host comm fail/host
Restoral Messages			
Door Restoral	DR	[#*aaaa*|Npi*ddd*DR]	Door closed/door
Relay Closed	RC	[#*aaaa*|Npi*ddd*RC]	DI Point alarm/input

Note: aaaa represents the communicator's account number and ddd represents the three character device number (such as door, area, host, input or Micro ID).

Several sources of information were investigated and their data has been incorporated into this specification. These include:

SIA Digital Communication Standard, February 1993

SIA Computer Interface Standard, June 1990

Radionics D6500 Security Receiver, 6500:MPU 07.00 Program Entry Guide, 1993

Radionics D6500 Security Receiver, Computer Interface Installation Manual, 1993

Radionics Technogram: "Noncompliance with SIA Standards", March 1994

Appendix E Configuring a DMP SCS interface

This appendix provides information on configuring the DMP SCS-1 interface to Picture Perfect which acts as a secondary monitoring system for the intrusion system alarm central receiver and recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The DMP SCS-1 interface to Picture Perfect acts as a secondary monitoring system for the intrusion system alarm central receiver and recognizes only the predefined messages types built into the interface and set up through Picture Perfect. These predefined messages are of the format and description as defined by the *SCS-1/ Host Output Specification document version 801*. The interface will display as much of any unknown messages as it can.

The Picture Perfect Alarm Monitor may be used to monitor messages from the DMP SCS-1 receiver. The information displayed in the Alarm Monitor will show the account number, status, loop and detector/module number and a user defined description field of message types known to the interface. Messages for an unknown account number but a known message type, along with messages of an unknown message type will also be displayed. For these messages, the Location field (Input Group Description) on the Alarm Monitor will begin with the “Input Group Prefix” followed by three asterisks (See the section *Identifying the input group prefix* on page 147 for more information). The Alarm Description field will contain as much of the message received from the SCS-1 receiver as possible, up to a maximum of 60 characters. Further message information should be obtained from the primary monitoring device which is the DMP SCS-1 receiver and its associated printer.

Communication from the DMP SCS-1 system to the Picture Perfect host is using a serial line connection. The communication is bidirectional. The interface will receive messages, and send ACK/NAK and other special case messages back to the SCS-1 system.

Messages or alarms recognized by the DMP SCS-1 interface are looked up in the Picture Perfect database using the input group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group. For messages not in the Picture Perfect database, a dynamic entry will be created in the input group and alarm database tables. These entries use the 20 to 200 database slots in the Picture Perfect Informix® input-group and alarm tables that are reserved at installation time. These represent the number of “unknown” SCS-1 messages that can be simultaneously displayed on the Alarm Monitor. When the reserved slots are depleted, the next unique “unknown” message will overwrite the oldest alarm.

Redundant Systems

The DMP SCS-1 system interface to Picture Perfect supports operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single intrusion receiver. Connectivity is achieved using a splitter between the Picture Perfect system and the DMP SCS-1 receiver. This allows the physical connection of the intrusion receiver to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the DMP SCS-1 interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host communicates with the DMP SCS-1 receiver. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are processed but output to the receiver is suppressed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the DMP SCS-1 receiver.

Software requirements

The software requirements for the DMP SCS-1 system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect DMP SCS-1 interface (`scs`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect DMP SCS-1 interface (`scs`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- DMP SCS-1 receiver, provided by the manufacturer.
- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the DMP SCS-1 communication program is started.

- Cable to connect the Picture Perfect system to the intrusion system console port. Refer to *Figure 43*.

Figure 43. Cable pinouts: Picture Perfect system to SCS-1 receiver (DB25F to DB25F)

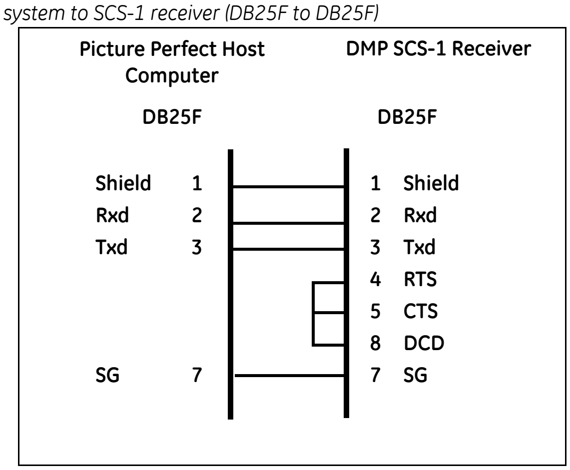
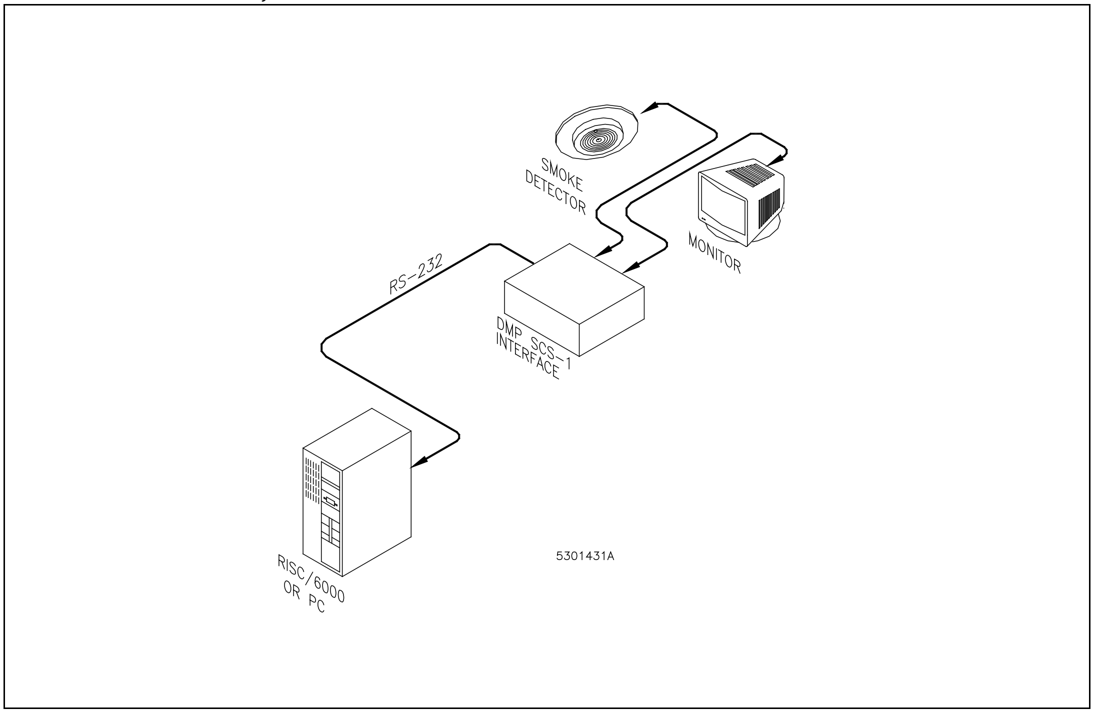


Figure 44. Overview of a Picture Perfect system and an intrusion interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- DMP SCS-1 receiver, provided by the manufacturer.
- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

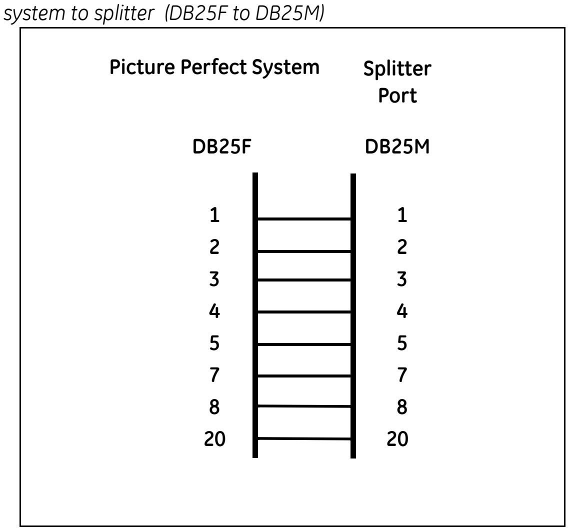
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the DMP SCS-1 communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 43*.

Figure 45. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect from the splitter master port to the DMP SCS-1 receiver (See figure below).

Figure 46. Cable pinouts: Splitter to SCS-1 receiver (DB25F to DB25F)

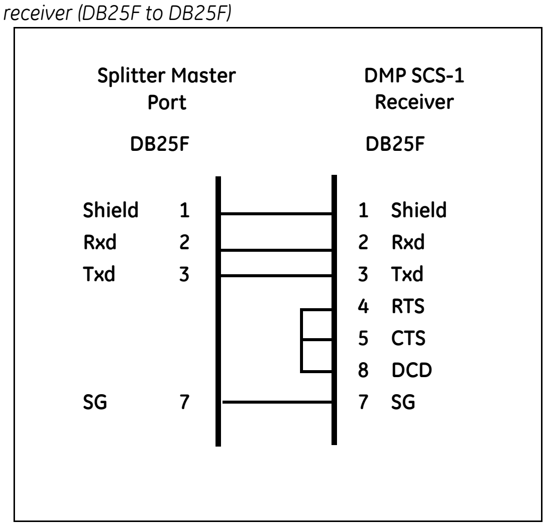


Figure 47. Overview of the cable configuration using a splitter

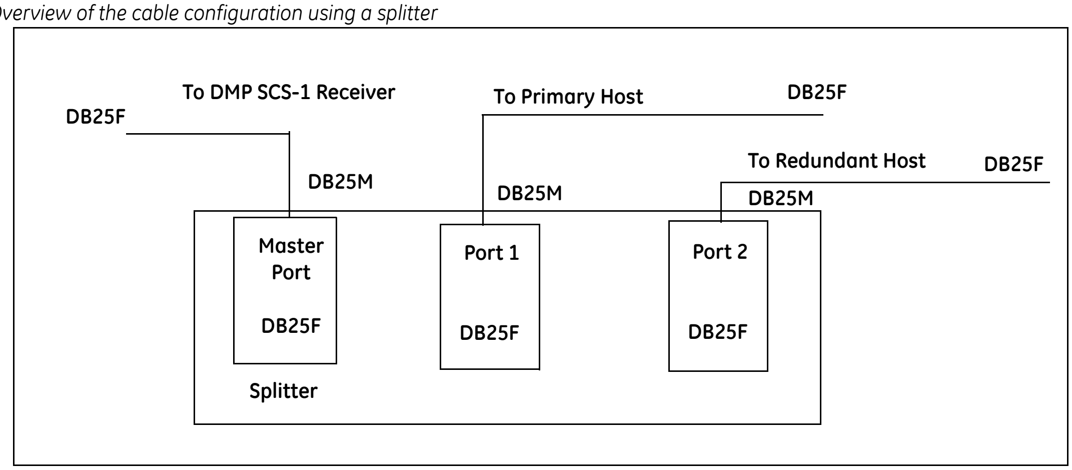
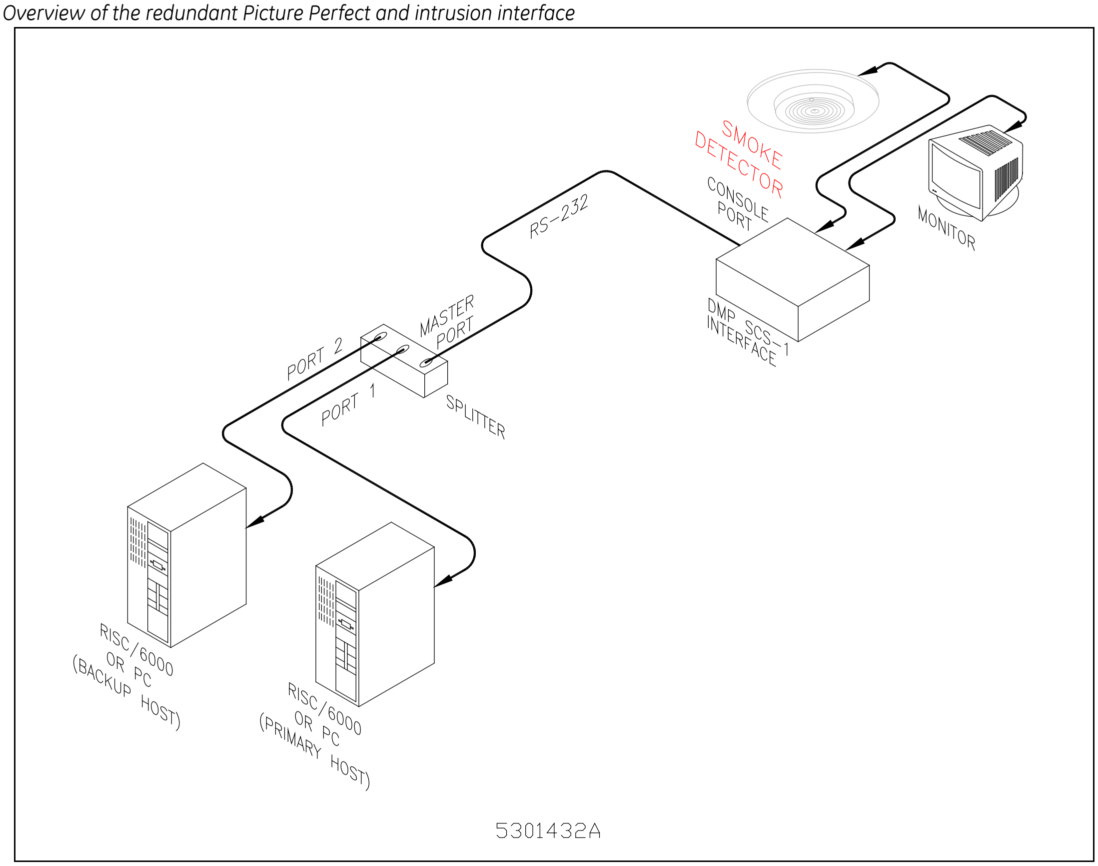


Figure 48. Overview of the redundant Picture Perfect and intrusion interface



Configuring DMP SCS-1

The SCS-1 interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. These messages types and formats used by the SCS-1 interface were derived from the *SCS-1/Host Output Specification document, version 801*. These messages must be configured on the Picture Perfect system.

There are two methods available to configure these messages:

1. Automatically using the `scsgen` data generator tool
2. Manually using Picture Perfect

If you plan to enter many messages at once, we strongly recommend you use the `scsgen` command line tool. Using `scsgen` exclusively to create or modify data records will enable you to keep track of the specific messages that are being monitored for a particular receiver on a specific port. This tool is explained in detail in the following section. However, if you choose to use Picture Perfect to insert the database records, this procedure is explained starting on page .150 with the section entitled *Using Picture Perfect to configure the DMP SCS-1 interface*.

Note: Database records added manually using Picture Perfect should be added to an scsgen input file so they may later be recreated in the event scsgen uninstall is used.

Using the scsgen Data Generator Tool

Use `scsgen` to install or uninstall database records that are associated with the SCS-1 alarm interface. This tool is part of the SCS-1 alarm interface package for Picture Perfect and is installed with the package. The `scsgen` tool will create the temporary files that it needs in the `/tmp` directory as it processes an input file and later generates the associated database records.

The install portion of this tool is explained in the next section.
See *scsgen – removal* on page 147 for an explanation of the uninstall portion.

scsgen – Installation

The install portion of the tool generates input group and alarm database records. Before running the install program, you will need to:

- Create an input file.
- Know the input group prefix.
- Create a list of the points that are going to be monitored which includes the account number, loop number, loop type, loop status, user number and area number. This kind of report can be obtained from the SCS-1 receiver.

Creating an Input File

The input file describes the types of messages and devices to be monitored by the DMP SCS-1 interface. It is a text editable file that must be created prior to running the `scsgen` tool.

To create an input file you will need to know:

- The version of Picture Perfect you are running. This is very important since the layout of the database records may differ depending on the version of Picture Perfect that is running.
- The message type you wish to monitor for a device type. The message types that can be monitored are discussed in later sections.
- For each device to be monitored, the device type and one of the following depending on the message type: account number, loop number, loop type, loop status, user number and area number. A report containing the installed devices can be obtained from the SCS-1 receiver. Please see your SCS-1 operation manual.
- A brief description that gives more detail about the device. This information will be used as the alarm description field for an alarm record.

The last three check boxes comprise the data format part of the input file. With this information the `scsgen` tool will generate and load the database with the appropriate input group and alarm database records.

Picture Perfect version

The first line of the input file must contain the Picture Perfect version that is running. The version number is used by the `scsgen` tool to determine the database input. The current versions that are supported by the `scsgen` tool are:

- 1.7 (RISC/AIX 4.3.3 and higher and Red Hat Linux 7.2 and higher)
- 2.0 (RISC/AIX 5L and higher and Red Hat Linux 7.3 and higher)
- 4.0 (RISC/AIX 5L Version 5.2 or Red Hat Linux WS, ES, or AS 4.0)
- 4.5 (RISC/AIX 6.1 or Red Hat Linux 5.3)

Input file data format

The lines of data that follow the Picture Perfect version number should contain rows of delimited text data that describe the message type, device type, location and alarm description. The delimiter character must be the "|" symbol. There should be one line of data for each unique combination of message type, message, account number, loop number, loop type, loop status, user number and area number, that is going to be monitored.

Each of the supported message types require variable columns of data and are illustrated in the following sections.

Message types:

Column descriptions for 'A' (Alarm), 'T' (Trouble), 'R' (Restore), 'B' (Force Arm) and 'W' (Fault) Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	Loop #	Loop Type	Alarm Description	Facility	Priority
1 char	5 digits	3 digits	2 chars	1 to 60 characters	1 to 10 digits	1 to 3 digits
A, T, R, B, or W		0-999	BL, FA, BA, SU, HU, EM, A1, A2		-1 or 1-2,147,483,647	1-500

Note: Three additional (optional) fields may be specified identifying a CCTV switcher name (see the list of Picture Perfect supported CCTV names in the section *Mapping CCTV monitored events* on page 61), such as kalatel or allplex, a CCTV number (the CCTV alarm number that will be sent to the switcher when the SCS alarm is received), and the TTY port by which the switcher is connected to the Picture Perfect host. When specifying the port, only use the tty portion of the name. For example, if the switcher is connected on /dev/tty2, only specify tty2.

Msg Type

This column is a one character abbreviation of the message type to be monitored.

`A`	Alarm Message
`T`	Trouble Message
`R`	Restore Message
`B`	Force Arm Message
`W`	Fault Message

Account

The account number is a five digit string with a range of 00000-99999.

Loop

The loop number is a three digit string with a range of 000-999.

Loop Type

The loop type is a two character alpha-numeric string that corresponds to an SCS-1 numeric type (range 0-7), interpreted as follows:

```
0=BL (BLANK) 1=FA (FIRE) 2=BA (BURGLARY) 3=SU (SUPERVISORY)
4=HU (PANIC) 5=EM (EMERGENCY) 6=A1 (AUXILIARY 1)
7=A2 (AUXILIARY 2)
```

`Alarm Description`

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs, and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the `scsgen` program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for ‘s’ System Alarm, Trouble, Supervisory Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	Message	Modifier	Alarm Description	Facility	Priority
1 char	5 digits	1 to 15 chars	4 digits	1 to 60 characters	1 to 10 digits	1 to 3 digits
s		DEVICE MISSING, DEVICE RESTORED, or ABORT	0-9999		-1 or 1-2,147,483,647	1-500

Note: Three additional (optional) fields may be specified identifying a CCTV switcher name (see the list of Picture Perfect supported CCTV names in the section *Mapping CCTV monitored events* on page 61), such as kalatel or allplex, a CCTV number (the CCTV alarm number that will be sent to the switcher when the SCS alarm is received), and the TTY port by which the switcher is connected to the Picture Perfect host. When specifying the port, only use the tty portion of the name. For example, if the switcher is connected on /dev/tty2, only specify tty2.

Msg Type

This column is always `s` for System Alarm, Trouble, Supervisory messages.

Account

Column two is the five digit account number, with a range of 00000-99999.

Message

This column is up to 15 characters in length and contains one of these three valid messages: `DEVICE MISSING`, `DEVICE RESTORED`, or `ABORT`.

Modifier

The modifier is a four digit string with a range of 0000-9999.

Alarm Description

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the `scsgen` program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for 'X' (Loop Bypass) and 'Y' (Loop Reset) Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	Loop #	User #	Alarm Description	Facility	Priority
1 char	5 digits	3 digits	3 digits	1 to 60 characters	1 to 10 digits	1 to 3 digits
X or Y		0-999	0-999		-1 or 1-2,147,483,647	1-500

Note: Three additional (optional) fields may be specified identifying a CCTV switcher name (see the list of Picture Perfect supported CCTV names in the section *Mapping CCTV monitored events* on page 61), such as kalatel or allplex, a CCTV number (the CCTV alarm number that will be sent to the switcher when the SCS alarm is received), and the TTY port by which the switcher is connected to the Picture Perfect host. When specifying the port, only use the tty portion of the name. For example, if the switcher is connected on /dev/tty2, only specify tty2.

Msg Type

This column is a one character abbreviation of the message type to be monitored. The following list defines the message type abbreviations and the possible status information that the message type can produce:

X	Loop Bypass
Y	Loop Reset

Account

Column two is the five digit account number with a range of 00000-99999.

Loop

The loop number is a three digit string with a range of 000-999.

User

Column three is used to specify the number of the user who was granted access. It is a two to four digit string with a range of 00-9999 based upon the SCS-1 programming.

Alarm Description

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the scsgen program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified

in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for 'z' Loop Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Msg Type	Account #	Loop #	Loop Type	Loop Status	Alarm Desc	Facility	Priority
1 char	5 digits	3 digits	2 chars	3 chars	1 to 60 chars	1 to 10 digits	1 to 3 digits
z		0-999	BL, FA, BA, SU, HU, EM, A1, A2	ALM, TBL, RST, FRA, FLT, BYP or LRS		-1 or 1-2,147,483,647	1-500

Note: Three additional (optional) fields may be specified identifying a CCTV switcher name (see the list of Picture Perfect supported CCTV names in the section *Mapping CCTV monitored events* on page 61), such as kalatel or allplex, a CCTV number (the CCTV alarm number that will be sent to the switcher when the SCS alarm is received), and the TTY port by which the switcher is connected to the Picture Perfect host. When specifying the port, only use the tty portion of the name. For example, if the switcher is connected on /dev/tty2, only specify tty2.

Msg Type

This column is always `z` for loop messages.

Account

Column two is the five digit account number with a range of 00000-99999.

Loop

The loop number is a three digit string with a range of 000-999.

Loop Type

The loop type is a two character alpha-numeric string that corresponds to an SCS-1 numeric type (range 0-7), interpreted as follows:

```
0=BL (BLANK) 1=FA (FIRE) 2=BA (BURGLARY) 3=SU (SUPERVISORY)
4=HU (PANIC) 5=EM (EMERGENCY) 6=A1 (AUXILIARY 1)
7=A2 (AUXILIARY 2)
```

```
Loop Status
```

The loop status is a 3 character alphabetic string description of the loop. Valid statuses are as follows:

```
ALM (Alarm), TBL (Trouble), RST (Restore), FRA (Force Arm), FLT (Fault), BYP
(Bypass), and LRS (Reset).
```

```
Alarm Desc
```

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the scsgen program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for ‘O’ (Disarmed), ‘C’ (Armed), and ‘L’ (Late to Arm) Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	User #	Area #	Alarm Description	Facility	Priority
1 char	5 digits	3 digits	2 digits	1 to 60 characters	1 to 10 digits	1 to 3 digits
O, C, or L		0-999	0-99		-1 or 1-2,147,483,647	1-500

Note: Three additional (optional) fields may be specified identifying a CCTV switcher name (see the list of Picture Perfect supported CCTV names in the section *Mapping CCTV monitored events* on page 61), such as kalatel or allplex, a CCTV number (the CCTV alarm number that will be sent to the switcher when the SCS alarm is received), and the TTY port by which the switcher is connected to the Picture Perfect host. When specifying the port, only use the tty portion of the name. For example, if the switcher is connected on /dev/tty2, only specify tty2.

Msg Type

This column is a one character abbreviation of the message type to be monitored. The following list defines the message type abbreviations and the possible status information that the message type can produce.

O	Disarmed
C	Armed
L	Late to Arm

Account

Column two is the five digit account number with a range of 00000-99999.

User

Column three is used to specify the number of the user who was granted access. It is a two to four digit string with a range of 00-9999 based upon the SCS-1 programming.

Area

The area number is a two digit string with a range of 00-99.

Alarm Description

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the `scsgen` program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified

in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column Descriptions for 'p' (Code Number Deleted), 'P' (Code Number Added), and 'U' (Code Number Changed) Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	User #	# Added	Alarm Description	Facility	Priority
1 char	5 digits	3 digits	3 digits	1 to 60 characters	1 to 10 digits	1 to 3 digits
p, P, or U		0-999	0-999		-1 or 1-2,147,483,647	1-500

Msg Type

This column is a one character abbreviation of the message type to be monitored. The following list defines the message type abbreviations.

`p`	Code Number Deleted
`P`	Code Number Added
`U`	Code Number Changed

Account

Column two is the five digit account number with a range of 00000-99999.

User

Column three is used to specify the number of the user who was granted access. It is a two to four digit string with a range of 00-9999 based upon the SCS-1 programming.

Added

The number added is a 3 digit string with a range of 000-999.

Alarm Description

The fifth column is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the `scsgen` program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for 'S' System Alarm, Trouble, Supervisory Message Types:

Col 1	Col 2	Col 3	Col 4
Msg Type	Account #	Facility	Priority
1 char	5 digits	1 to 10 digits	1 to 3 digits
S		-1 or 1-2,147,483,647	1-500

Msg Type

This column is always `S` for System Alarm, Trouble, Supervisory messages.

Account #

Column two is the five digit account number with a range of 00000-99999.

Facility

The sixth column is used to specify the `facility id` that will be used for the input_group and alarm records generated. During the execution of the scsgen program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the scsgen program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for ‘J’ Door Access Granted Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	User #	Device Addr	Alarm Desc	Facility	Priority
1 char	5 digits	2 to 4 digits	2 chars	1 to 60 chars	1 to 10 digits	1 to 3 digits
J		00-9999	01-08		-1 or 1-2,147,483,647	1-500

Msg Type

Column one is always `J` for door access granted messages.

Account #

Column two is the five digit account number with a range of 00000-99999.

User #

Column three is used to specify the number of the user who was granted access. It is a two to four digit string with a range of 00-9999 based upon the SCS-1 programming.

Device Addr

Column four is used to specify the address of the device where the access was granted. It is a two character string with the range of 01-08.

Alarm Desc

Column five is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `alarm` records generated. During the execution of the `scsgen` program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for ‘i’ (Secondary Schedule Changed), ‘I’ (Temporary Schedule Changed), n’ (Primary Schedule Changed) and ‘N’ (Permanent Schedule Changed) Message Types:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6
Msg Type	Account #	User #	Alarm Desc	Facility	Priority
1 char	5 digits	2 to 4 digits	1 to 60 chars	1 to 10 digits	1 to 3 digits
i, I, n, or N		00-9999		-1 or 1-2,147,483,647	1-500

Msg Type

Column one is a one character abbreviation of the message type to be monitored. The following list defines the message type abbreviations and the possible status information that the message type can produce.

`i` Secondary Schedule Changed

`I` Temporary Schedule Changed

`n` Primary Schedule Changed

`N` Permanent Schedule Changed

Account

Column two is the five digit account number with a range of 00000-99999.

User

Column three is used to specify the number of the user who changed the schedule. It is a two to four digit string with a range of 00-9999 based upon the SCS-1 programming.

Alarm Desc

Column four is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input field data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility id` that will be used for the `input_group` and `al`arm records generated. During the execution of the scsgen program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the `scsgen` program, you will be prompted for the Default SCS Priority (a

number in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Column descriptions for 'v' (Variable Length Message) Message Type:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Msg Type	Account #	Msg Type	Msg Text	Alarm Desc	Facility	Priority
1 char	5 digits	2 digits	1 to 16 chars	1 to 60 chars	1 to 10 digits	1 to 3 digits
v		1 to 99 digits			-1 or 1-2,147,483,647	1-500

Msg Type

Column one is always `v` for variable length messages.

Account

Column two is the five digit account number with a range of 00000-99999.

Msg Type

Column three is used to specify the type of custom text. There are currently no types defined. It is a two character field with a range of 01 - 99.

Msg Text

Column four is used to specify up to the first 16 characters of the custom text. It is a one to sixteen character field with a range of 0 - 9, A - Z, etc.

Alarm Desc

Column five is used as the alarm description field for the alarm record that is created for the associated input group record. This description is what appears on the Alarm Monitor when an alarm occurs and should be used as a custom device label that helps describe more information about the device or detector and the event that occurred. It can be up to 60 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input field data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an already existing alarm record in the Picture Perfect database. This is an illegal condition that scsgen checks for before any data is generated.

Facility

The sixth column is used to specify the `facility` id that will be used for the input_group and alarm records generated. During the execution of the scsgen program, you will be prompted to select a Default SCS Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default SCS Facility that was selected will be used. To determine the valid `facility id` values, create a report, using as the SQL statement `Select id, description FROM facility`, print the report, and keep it handy when creating the input file.

Priority

The seventh column is used to specify the `priority` that will be used for the alarm record generated. During the execution of the scsgen program, you will be prompted for the Default SCS Priority (a number

in the range 1-500). If a Priority value is not specified in the input file, then the Default SCS Priority will be used.

Example input file

The following is an example of an input file for a Picture Perfect 4.5 system.

```
4.5
A|12345|123|HU|BLDG 3 ROOM 7 EXHAUST HOOD|23|25|kalatel|12|tty2
A|30122|001|BA|FRONT DOOR|10|5
R|30122|001|BA|FRONT DOOR|10|
A|30122|002|BA|BACK DOOR|10|5
R|30122|002|BA|BACK DOOR|10|
A|30122|003|BA|VAULT DOOR|10|5
R|30122|003|BA|VAULT DOOR|10|
T|01277|345|BL|WEST DOOR BLDG 4 ROOM||allplex|34|tty3
s|34567|DEVICE MISSING|1234|DEVICE MISSING||
X|77777|421|888|LOOP IS IN BYPASS|15|
Y|77777|421|888|LOOP IS IN RESET|15|30|kalatel|56|tty2
z|78654|123|SU|TBL|TBL - SUPERVISORY SITUATION||
z|78654|123|EM|ALM|ALM - EMERGENCY SITUATION|15|30|allplex|77|tty3
O|23456|333|01|USER 333 PERIMETER DISARMED|15|30|allplex|78|tty3
C|34521|444|02|USER 444 INTERIOR ARMED||35
L|23411|333|01|USER 333 PERIM LATE TO CLOSE|23|20|allplex|99|tty3
P|34567|123|456|USER 123 ADDED NUMBER 456|-1|12
p|44335|444|555|USER 444 DELETED|-1|12
U|11221|888|999|USER 888 CHANGED TO 999|-1|12
S|10001||
J|30122|200|8|USR 200 GRNTD DOOR ACCS DEV 12||
N|30122|200|USR 200 CHANGED PERM SCHEDULE||
I|30122|200|USR 200 CHANGED TEMP SCHEDULE||
n|30122|200|USR 200 CHANGED PRI SCHEDULE||
i|30122|200|USR 200 CHANGED SEC SCHEDULE||
v|30122|33|VAR MSG TEXT MSG|MSG TYPE 33 VAR MSG TEXT||
```

The first data line, after the Picture Perfect version line, is an example of an alarm message type that triggers a CCTV response. The input group records created are unique for each line in the input file. The line in the file for an ‘`S`’ message will generate 76 input records for the specified account number. An example of the input groups and alarm records that are generated from one line of an input file is shown in the section *Input Group and Alarm Records Generated by scsgen* on page 140.

Input file recommendations

Always keep the input file around for future reference on how your system has been set up. It will be extremely useful in understanding what database records have been generated. It will be required information for Customer Support should you need help in configuring the interface.

DO NOT re-use the original input file that has data added to it without doing an uninstall first. Un-installs are discussed in later sections. If you have new data for the generator and have not un-installed using `scsgen` then you should uninstall or put it in a separate input file. Once the new data is added to the

system, the information should be added back to your original input file, so that one file exists from which all the `scs` records can be generated.

Input File Error Checking

The input file will be checked for error conditions before any data records are generated. If an error occurs within the input file, the `scsgen` tool will display the error on the screen. The type of error, the column it occurred in, and the line it occurred on in the input file will be given. The input file must be error free before any data records are generated.

Identifying the Input Group Prefix

The DMP SCS-1 interface uses the input group prefix to search specific input group records for messages that are to be monitored. This input group prefix was established during installation of the interface, for every serial line that was configured. The prefix for the DMP SCS-1 interface is stored in the configuration file for that interface and is read every time it is started. With this in mind, it is a requirement to know the input group prefix of the interface for which the `scsgen` tool is going to generate database records. To determine this you must look in the appropriate `/cas/db/text/scs_XXX.cfg` file where XXX is the tty name of the port for which the interface is configured. Examine the appropriate file and look for a line that starts with `InpGrpPrefix`. The value following this string is the input group prefix being used by the SCS-1 interface for that port.

Input Group Prefix Usage When Installing

When using the install portion of the `scsgen` tool, the input group prefix is used as the prefix for the description field for all input group records generated. Again, it should be stressed that the input group prefix used by the tool must match the SCS-1 interface that is being targeted.

Input Group Prefix When Un-installing

The input group prefix is used when using the uninstall portion of the `scsgen` tool. All input group records that have descriptions that match the input group prefix (the first 3 to 4 characters) will be removed from the database except for the slots that were reserved during package installation for the dynamically created "unknown" alarms. The alarm records that each input group points to will be removed with one exception. If the alarm record is linked to any other input group records outside of the ones to be removed, the `scsgen` tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the `scsgen` tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it does not conflict with alarms that are going to be removed. This prevents accidental removal of alarm records linked to other input group records.

Input Group and Alarm Records Generated by scsgen

The input file processed by `scsgen` produces input group and alarm database records that are inserted into the database when the tool is run. The input group records created are unique for each valid line in the input file. This is done by combining the input group prefix, message status possibilities, device type and loop/detector into the description field of an input group record. For example, let's use the following line of data and assume an input group prefix of "SCS1".

```
A|12345|123|HU|BLDG 3 ROOM 7 EXHAUST HOOD|23|25|kalatel|12|tty2
```

This message would generate:

- one input group record with the following description

`SCS1 12345 123 HU ALM`

- one alarm record would be generated with the following description

  `BLDG 3 ROOM 7 EXHAUST HOOD`

The input group record would be linked to this alarm. In addition, a new entry specifying that CCTV camera 7 connected to the Kalatel switcher should be activated when this alarm occurs will be added to the Kalatel switcher map file.

There are other important fields to an input group and alarm record that automatically are completed by the generator. For the input group records, the following fields are set accordingly:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Parent Input Group	should all be <BLANK>
Output Group	should all be <BLANK>
Facility	<facility specified>

The default values for the alarm records are:

Online	Yes
Reset Outputs	Auto Reset Outputs
Alarm Routing	Monitor and History
Priority	<priority specified>
Immediate Reset Input	Yes
Facility	<facility specified>

Installing using scsgen

Before you start:

- You must have `root` permission to run the `scsgen` tool.
- The database must be running. This will be checked by `scsgen` when the tool is invoked.
- A valid input file must exist that contains the Picture Perfect version and data lines for the message types to be monitored for the described devices.
- You must know the input group prefix used by the SCS-1 interface that is being targeted for data generation. See the section *Identifying the Input Group Prefix* on page 140 for more information.

Follow these steps to use the scsgen tool to install database records:

1. Log in as `root`, or `su - root` if already logged in, but not as the root user.

   You should see a `#` prompt.
2. Change to the directory where the input file is located.
3. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `scsgen` tool and the database tools it uses.
4. Type: `scsgen` Enter

   Messages similar to the following appear on the screen:

   ```
   SCS-1 Data Generator 2.0

   Would you like to (i)nstall or (u)n-install data records (i/u)? [i]
   ```
5. To use the install option, press Enter or type: `i` Enter

   The following messages will display:

   ```
   You have chosen to install database records.

   Please enter input file name.....................................:
   ```
6. Enter the name of your input file.

   The input file you entered will be displayed and you will be asked to confirm it.

   ```
   You entered as the input file name......................:scs.inp
   Is this correct (y/n)? [y]
   ```
7. To confirm the input file name, accept the default `[y]` by pressing Enter. Enter `n` to change the name.

   If you entered `n`, you will be asked to re-enter the name.
   If you entered `y`, the following messages will be displayed:

   ```
   Enter the input group prefix to be used when creating the records. It must be 3 to 4
   characters with the last character(s) numeric.

   For example: SCS1

   NOTE: This prefix must be the same one that is used by the interface that is being
   targeted. Refer to the documentation for more information about input group
   prefixes.

   Enter the input group prefix.....................................:
   ```

8. Enter the name of your input group prefix.

   The input group prefix you entered will be displayed, and you will be asked to confirm it.

```
The input group prefix you entered was......................: SCS1
Is this correct (y/n)? [y]
```

9. To confirm the input group prefix, accept the default `[y]` by pressing Enter. Enter `n` to re-enter the prefix.

   If you entered `n`, you will be asked to re-enter the value.
   If you entered `y`, messages similar to the following will be displayed, regarding the selection of a default facility for the SCS interface:

```
**--------------------------------------------------------------**
**        Default SCS Facility assignment portion **
**--------------------------------------------------------------**
When the input_group and alarm records are created, they will require an associated
facility. You need to select the default facility that will be used when creating
the input_group and alarm records, if an explicit one is not specified.
The currently available (defined) facilities will be displayed, and you will need to
make a selection from the provided list. If you need to create a new facility
specifically for the SCS input_groups and alarms, then you should exit this program,
create the facility using the GUI, then re-run this program and then choose that
facility.
Do you wish to exit this program now (y/n)? [n]
```

10. Enter a `y` to exit the script or an `n` to enter a facility from the choices that will be provided.

    If you entered `y`, you will exit the program, and you may create a facility specifically for the SCS interface, if you so desire, then re-run the script.

    If you entered `n`, a list of the currently defined facilities on your system will be displayed, and you will need to make a selection. If the number of facilities on your system exceeds 18, you will need to press Enter to continue through the list, until you get to the prompt. When you observe the facility that you desire to use by default with the interface, keep track of the number. This list will be similar to the following:

```
Acquiring facility list from database. Please wait...
The following facilities are defined on your system, and available to be chosen as
the default facility:
======================================================
     1:   DEFAULT FACILITY
     2:   Building 1
     3:   Building 2
     4:   Building 3
     5:   Building 4
     6:   Building 5
     7:   BLDG 1,2,3,4,5 AND PARKING
     8:   BLDG 2 STUDIO
     9:   BLDG 2 DESIGN AID
     10:  Security Control Center
     11:  Head Office
```

```
     12:  Building 1 Garage
     13:  Building 2 Garage
     14:  Building 3 Garage
     15:  Building 4 Garage
     16:  Building 5 Garage
     17:  Head Office Garage
     18:  Penthouse
Press RETURN for more ...
     19:  B-1 COMP ROOMS
     20:  REGENT COURT
     21:  Facility A
     22:  Facility B
     23:  SCS Facility
Enter the value of the default SCS facility [1-23] ...: [1]
```

11. Enter the number of the default facility to use with the SCS interface. This value will be used when creating `input_group` and `alarm` records from the entries in the input file for which a specific facility is not specified.

    The facility you selected will be displayed, and you will be asked to confirm it.

```
You have selected as the default facility ............:SCS Facility
Is this ok (y/n)? [y]
```

12. Enter a `y` to confirm, or an `n` to re-enter the default facility.

    If you entered `n`, you will be asked to re-enter the value.

    If you entered a `y`, the facility you selected, and its id will be displayed, and you will be prompted for the default alarm priority to use for the alarms created.

```
Default Facility chosen is    :[SCS Facility]
Default Facility's id is:[35]
**--------------------------------------------------------------**
**        End of Default SCS Facility assignment portion **
**--------------------------------------------------------------**
Enter the default alarm priority. It is the priority that will be used for any alarm
that has no priority specified.
Value may be in the range 1-500:[50]
```

13. Enter the priority to use for the alarms created from the input file that do not have an explicit priority specified.
14. The priority entered will be displayed, and you will be asked to confirm it.

```
Selected default alarm priority is............................: 30
Is this correct (y/n)? [y]
```

15. Enter a `y` to confirm, or an `n` to re-enter the default alarm priority.

    If you entered `n`, you will be asked to re-enter the value.

    If you entered a `y`, the script will proceed to check the input data.

If there are errors with the input data, they will be displayed, and you will need to correct those errors, the re-run the `scsgen` script again to process the corrected input file.

If no errors are found, the input_group and alarm records will be entered into the Picture Perfect database. You will see messages similar to the following:

```
Checking input group file data...
Installing Records...
DBLOAD Load Utility           INFORMIX-SQL Version 9.30.UC4
Copyright (C) Informix Software, Inc., 1984-1997
Software Serial Number AAB#C705595
100 Row(s) loaded so far to table input_group.
Table input_group had 117 row(s) loaded into it.
100 Row(s) loaded so far to table alarm.
Table alarm had 114 row(s) loaded into it.
statement = UPDATE STATISTICS FOR TABLE input_group
statement processed OK
statement = UPDATE STATISTICS FOR TABLE alarm
statement processed OK
          Added entry SCS1 20 1278...296
          Added entry SCS1 22 1280...298
          .
          .
          .
          Added entry SCS1 99 1349...367
igd=SCS1 30122 123 HU ALM cctvName=kalatel cctv=12
kalatel 1239 260 1239 12 ktd_tty2
          .
          .
          .
igd=SCS1 23411 LATE-CLOSE 333 01 cctvName=allplex cctv=99
allplex 974 414 974 99

Generated 2 new entries for CCTV switcher device kalatel
map table
Generated 4 new entries for CCTV switcher device allplex
map table

Successfully appended new entries to map table for
CCTV device..............................................:kalatel
Successfully appended new entries to map table for
CCTV device..............................................:allplex

Installation complete.

You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

16. To inform the system, accept the default `[y]` by pressing Enter. Enter `n` to not inform the system.

    If you entered `n`, the changes just made will not be sent to the interface until the next time it is restarted and you will exit the script.

If you entered y, a message will be sent to the running interface and the new map changes will be re-read and take effect immediately. Messages similar to the following will appear, then you will exit the script.

In a redundant environment, messages similar to the following will also appear:

```
Bring host backup1 up to date with host primary1
Successfully copied primary1:/cas/db/text/ktd.map to backup1:
/cas/db/text/ktd.map
Successfully copied primary1:/cas/db/text/allp.map to backup1:
/cas/db/text/allp.map

Sending signal USR2 to task ktd_tty2...
Sending signal USR2 to task allp_tty3...
Sending signal USR2 to task msan...
```

Using scsgen to generate new device data after an initial installation

If there are new devices to be monitored by the SCS-1 interface after an `scsgen` installation, then one of the following methods should be used when using the `scsgen` tool. Use these methods when you are adding new devices to be monitored by the interface.

If you are going to be adding or changing message types in the input file for existing database records, then proceed to the *Using scsgen to change or add message types for an existing device after an initial installation* on page 147.

Method 1

1. Create a new input file with the new data lines.
2. Invoke `scsgen` and use the new input file.

Method 2

1. Use `scsgen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix, except for the entries reserved for dynamic generated alarms.

   Note: Any input group (and its associated alarm), using the input_group prefix targeted for un-installation, that was created manually through the Picture Perfect Input Group form, will be removed. This means it will be permanently lost if it's data was not originally part of the input file. To avoid this situation, for any input groups and associated alarms created manually, a corresponding entry should be added to the input file, so that ALL of the SCS data may be automatically recreated at a later date.

2. Add the new device data to the input file.
3. Invoke `scsgen` and use the modified input file to re-create the data records.

Using scsgen to change or add message types for an existing device after an initial installation

If you need to add additional message types or change the defined data for an existing SCS-1 interface, you should do the following.

1. Use `scsgen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix, except for the entries reserved for dynamically generated alarms.

   Note: Any input group (and its associated alarm), using the input_group prefix targeted for un-installation, that was created manually through the Picture Perfect Input Group form, will be removed. This means it will be permanently lost if it's data was not originally part of the input file. To avoid this situation, for any input groups and associated alarms created manually, a corresponding entry should be added to the input file, so that ALL of the SCS data may be automatically recreated at a later date.

2. Change or add the message types in the original input file. Records added manually should have been added to the file by the person who created them. (See note on page 126)
3. Invoke `scsgen` and use the modified input file to re-create the data records.

scsgen – removal

This portion of `scsgen` removes the database records associated with a specific DMP SCS-1 interface. Before running the uninstall program, you will need to know the input group prefix.

Note: It is a good idea to backup the database before using the uninstall portion of the scsgen tool. This can be done through the Control/Backup form. See your Picture Perfect documentation for more details.

Identifying the input group prefix

All input group records that have descriptions that match the input group prefix (the first 3 to 4 characters) will be removed from the database except for the entries reserved for dynamically generated alarms. The alarm records that each input group points to will be removed as well but with one exception. If the alarm record is associated to any other input group records outside of the ones to be removed, the `scsgen` tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the `scsgen` tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it is does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records that other input group records are linked.

Note: Any input group (and its associated alarm), using the input_group prefix targeted for un-installation, that was created manually through the Picture Perfect Input Group form, will be removed. This means it will be permanently lost if it's data was not originally part of the input file. To avoid this situation, for any input groups and associated alarms created manually, a corresponding entry should be added to the input file, so that ALL of the SCS data may be automatically recreated at a later date.

Removing scsgen

Before you start:

- You must have `root` permission to run the `scsgen` tool.
- The database must be running. When the tool is invoked `scsgen` will check this.
- You must know the input group prefix used by the DMP SCS-1 interface that is being targeted for un-installation.

Follow these steps to use the scsgen tool to uninstall database records:

1. Log in as `root`, or `su - root` if already logged in, but not as the `root` user.

   You should see a `#` prompt.

2. Change to the directory where the input file name is located.

3. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct path environment variable that will give you access to the `scsgen` tool and the database tools it uses.

4. Type: `scsgen` Enter

   Messages similar to the following appear on the screen:

   ```
   SCS-1 Data Generator 1.2

   Would you like to (i)nstall or (u)n-install data records? [i]
   ```

5. To use the uninstall option, type: `u` Enter

   The following messages will display:

   ```
   You have chosen the UN-INSTALL portion of this script. You must enter the input
   group prefix to un-install the SCS-1 database records. This is the first 3 to 4
   characters used in the description field of the input group records. Entering this
   prefix will result in the removal of the input group and associated alarm records
   from the database.

   If running multiple interfaces make sure you enter the prefix that matches the input
   group prefix used for that particular interface. If properly installed each SCS-1
   interface should have a different input group prefix that is used specifically for
   that interface.

   Do you know the input group prefix and want to continue (y/n)? [y]
   ```

6. To continue, accept the default `[y]` by pressing Enter. To stop, press `n`.

   If you choose to continue, a message similar to the following will display:

   ```
   Enter the input group prefix...........................:
   ```

7. Enter the input group prefix.

The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: SCS1
Is this correct (y/n)? [y]
```

8. To continue, accept the default `[y]` by pressing Enter. To re-enter the prefix, press `n`.

   If you chose to continue, the records will be deleted and you will see messages similar to the following:

```
Making alarm id checks for input group prefix 'scs1'...
Deleting input group and alarm records...

The following log files contain the SQL statements and errors logged during the
delete process:
/tmp/scs_inpgrp_del.log
/tmp/scs_alarm_del.log

Successfully deleted entries from switcher device kalatel map file
Successfully deleted entries from switcher device allplex map file


Un-install completed!

You have made changes to one or more cctv mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

9. If this script was called from the removal script, then select `n` to not inform the system now since it's not running. When re-started, the changes will take effect. If the Picture Perfect system is running, select `y` if you want these changes to take effect now, or `n` if you want them to take effect at the next restart.

   If `n` was selected, you will return to the # prompt or back to the removal script:

   If `y` was selected, messages similar to the following will appear then you will exit the script.

   In a redundant environment, messages similar to the following will also appear:

```
    Bring host backup1 up to date with host primary1
    Successfully copied primary1:/cas/db/text/ktd.map to backup1:
    /cas/db/text/ktd.map
    Successfully copied primary1:/cas/db/text/allp.map to backup1:
    /cas/db/text/allp.map

Sending signal USR2 to task ktd_tty2...
Sending signal USR2 to task allp_tty3...
Sending signal USR2 to task msan...
```

Using Picture Perfect to configure the DMP SCS-1 interface

For a successful configuration, follow these steps:

1. Add or modify input groups for the possible messages.
2. Add or modify alarms.
3. Add or modify output groups and outputs, if desired.
4. Monitor alarms.

Adding or modifying input groups

The input group record description field is the key to identifying specific DMP SCS-1 receiver messages. The format of the input group description is defined such that it can be set up to identify the specific message types coming from the receiver for a specific device type.

Due to the numerous device types, statuses and possible locations, a set of rules must be established for the interface when defining an input group description. The rules are basically formatting issues so that the interface can look for matches in the database using input groups in the description field. These rules will vary depending on the message type to be monitored. Message types that have device and/or status variability are as follows:

Message type abbreviation	Message type
A	Alarm
T	Trouble
R	Restore
B	Force Arm
W	Fault
s	System Alarm, Trouble, Supervisory System Message with Modifier
S	System Alarm, Trouble, Supervisory (92 unique messages)
X	Loop Bypass
Y	Loop Reset
z	Loop messages with subtypes: Alarm (a), Restore (r), Fault (w), Reset (y), Trouble (t), Force Arm (b), and Bypass (x)
O	Disarmed
C	Armed
L	Late to Arm
P	Code Number Added
p	Code Number Deleted
U	Code Number Changed
N	Permanent Schedule Changed

Message type abbreviation	Message type
l	Temporary Schedule Changed
n	Primary Schedule Changed
i	Secondary Schedule Changed
J	Door Access Granted
v	Variable length message with Type

It is crucial to understand the format for each message type when setting up an input group since this is the key to monitoring messages from the SCS-1 system. The input group description field is limited to 60 characters which will be fully utilized in many cases to uniquely identify a specific message type and status for a particular device. Each message type will always use the input group prefix as the first part of the description. See *Identifying the Input Group Prefix* on page 140 for more information.

If you are going to add a number of input group records for the DMP SCS-1 interface it is suggested that you use the `scsgen` data generator tool which is capable of quickly producing input group and associated alarm records automatically given a formatted input file. See the section entitled *Using the scsgen Data Generator Tool* on page 126 for more information on using this tool.

The input group prefix used in any of the listed message types must match the one established in the appropriate configuration file. See *Identifying the Input Group Prefix* on page 140 for more information.

When establishing an input group record, the description field must follow the format for the appropriate message type. Uppercase characters are required and there should be exactly one space between each field for each of the message types described in the following sections.

Note: Be aware that input groups and associated alarms that are created manually will be removed if the uninstall portion of the scsgen tool is run since it removes records according to the input group prefix. Database records added manually using Picture Perfect should be added to an scsgen input file so they may later be recreated in the event scsgen -uninstall is used.

Alarm (A) Message Type

To recognize Alarm message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <STATUS>
```

where:

- `IGP` is the input group prefix. Up to four characters.
- `ACCOUNT NUMBER` is a five digit string. From 0 to 99999.
- `LOOP NUMBER` is a three digit string, 0 to 999.
- `LOOP TYPE` is a two character alphabetic string, where an incoming SCS-1 numeric type, range 0-7, is interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- `STATUS` is a three character string A=ALM.

Trouble (T) Message Type

To recognize Trouble message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <STATUS>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `ACCOUNT NUMBER` is a five digit string, 1 to 99999.
- `LOOP NUMBER` is a three digit string, 0 to 999.
- `LOOP TYPE` is a two character alphabetic string, where an incoming SCS-1 numeric type, range 0-7, is interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- `STATUS` is a three character string , T=TBL.

Restore (R) Message Type

To recognize Restore message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <STATUS>
```

where:

- `IGP` is the input group prefix. Up to four characters.
- `ACCOUNT NUMBER` is a five digit string, 0 to 99999.
- `LOOP NUMBER` is a three digit string, 0 to 999.
- `LOOP TYPE` is a two character alphabetic string, where an incoming SCS-1 numeric type, range 0-7, is interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- `STATUS` is a three character string R=RST.

Force Arm (B) Message Type

To recognize System Trouble message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <STATUS>
```

where:

- `IGP` is the input group prefix. Up to four characters.
- `ACCOUNT NUMBER` is a five digit string, 0 to 99999.
- `LOOP NUMBER` is a three digit string, 0 to 999.
- `LOOP TYPE` is a two character alphabetic string, where an incoming SCS-1 numeric type, range 0-7, interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- `STATUS` is a three character string B=FRA.

Fault (W) Message Type

To recognize Fault message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <STATUS>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- LOOP NUMBER is a three digit string, 0 to 999.
- LOOP TYPE is the two character alphabetic string, where an incoming SCS-1 numeric type, range 0-7, is interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- STATUS is a three character string W=FLT.

's' System Alarm, Trouble, Supervisory Message Type

To recognize 's' System Alarm, Trouble, Supervisory message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <MESSAGE> <MODIFIER>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- MESSAGE is up to fifteen characters, and can be DEVICE MISSING, DEVICE RESTORED, or ABORT.
- MODIFIER is a four digit string, 0 to 9999.

Loop Bypass (X) Message Type

To recognize Loop Bypass message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <USER NUMBER> <STATUS>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- LOOP NUMBER is a three digit string, 0 to 999.
- USER NUMBER is a three digit string, 0 to 999.
- STATUS is the string Bypass.

Loop Reset (Y) Message Type

To recognize Loop Reset messages use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <USER NUMBER> <STATUS>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- LOOP NUMBER is a three digit string, 0 to 999.
- USER NUMBER is a three digit string, 0 to 999.
- STATUS is the string Reset.

Loop (z) Message Type

To recognize Loop messages use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <LOOP NUMBER> <LOOP TYPE> <LOOP STATUS>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- LOOP NUMBER is a three digit string, 0 to 999.
- LOOP TYPE is a two character alphabetic string, where an incoming SCS-1 numeric type of 0-7 is interpreted internally by Picture Perfect as: 0=BL, 1=FA, 2=BA, 3=SU, 4=HU, 5=EM, 6=A1, and 7=A2.
- LOOP STATUS is a three character string description of the loop, where valid statuses are ALM, TBL, RST, FRA, FLT, BYP, and LRS.

Disarmed (O), Armed (C), Late-To-Arm (L) Message Type

To recognize O, C, L messages use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <STATUS> <USER NUMBER> <AREA NUMBER>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- STATUS is up to ten characters, and can be DISARMED, ARMED, or LATE-CLOSE.
- USER NUMBER is a three digit string, 0 to 999.
- AREA NUMBER is a two digit string, 0 to 99.

Code Number Deleted (p), Code Number Added (P), Code Number Changed (U) Message Types

To recognize Code Number Deleted, Code Number Added, and Code Number Changed message types use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <STATUS> <USER NUMBER> <NUMBER ADDED>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 0 to 99999.
- STATUS is up to twelve characters, and can be CODE-ADDED, CODE-DELETED, or CODE-CHANGED.
- USER NUMBER is a three digit string, 0 to 999.
- NUMBER ADDED is a three digit string, 0 to 999.

Permanent Schedule (N), Temporary Schedule (I), Primary Schedule (n), Secondary Schedule (i) Message Types

To recognize Permanent, Temporary, Primary, and Secondary, Schedule message types, use the following format in the input group description.

```
<IGP> <ACCOUNT NUMBER> <MSG DESC> <USER NUMBER>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 00 to 99999.
- MSG DESC is the description of the type of the message, and must be one of the following strings:

PERM-SCHD-CHG
TEMP-SCHD-CHG
PRI-SCHD-CHG
SEC-SCHD-CHG

- USER NUMBER is a two to four digit string, 00 to 9999. The length of this field is based on SCS-1 programming, and is specified for this interface during installation.

Variable Length Message with Type (v)

To recognize variable length message types, use the following format in the input group description:

```
<IGP> <ACCOUNT NUMBER> <MSG TYPE> <MSG TEXT>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 00 to 99999.
- MSG TYPE is the type for custom text, and is a two digit string, 01 to 99.
- MSG TEXT is up to the first 16 characters of the custom text.

Door Access Granted (J) Message Type

To recognize door access granted message types, use the following format in the input group description:

```
<IGP> <ACCOUNT NUMBER> <MSG TYPE> <DEVICE ADDR> <USER NUMBER>
```

where:

- IGP is the input group prefix. Up to four characters.
- ACCOUNT NUMBER is a five digit string, 00 to 99999.
- MSG TYPE is the string 'ACCS-GRNTD'.
- DEVICE ADDR is a two digit string, 01 to 08.
- USER NUMBER is a two to four digit string, 00 to 9999. The length of this field is based on SCS-1 programming, and is specified for this interface during installation.

'S' System Alarm, Trouble, Supervisory Message

To recognize S (System Alarm, Trouble, Supervisory) message types use the following format in the input group description. The exception to this format is that the following list of S messages do not have an account number:

S20	S63
S22	S64
S57	S65
S58	S68
S59	S69
S60	S70
S61	S98
S62	S99

```
<IGP> <ACCOUNT NUMBER> <MESSAGE>
```

where:

- `IGP` is the input group prefix. Up to four characters.
- `ACCOUNT NUMBER` is a five character alphanumeric string.
- `MESSAGE` is a two digit string, range 00 to 99, which represents a "message lookup" into a table of system messages.

Adding an input group

Follow these steps to add an input group:

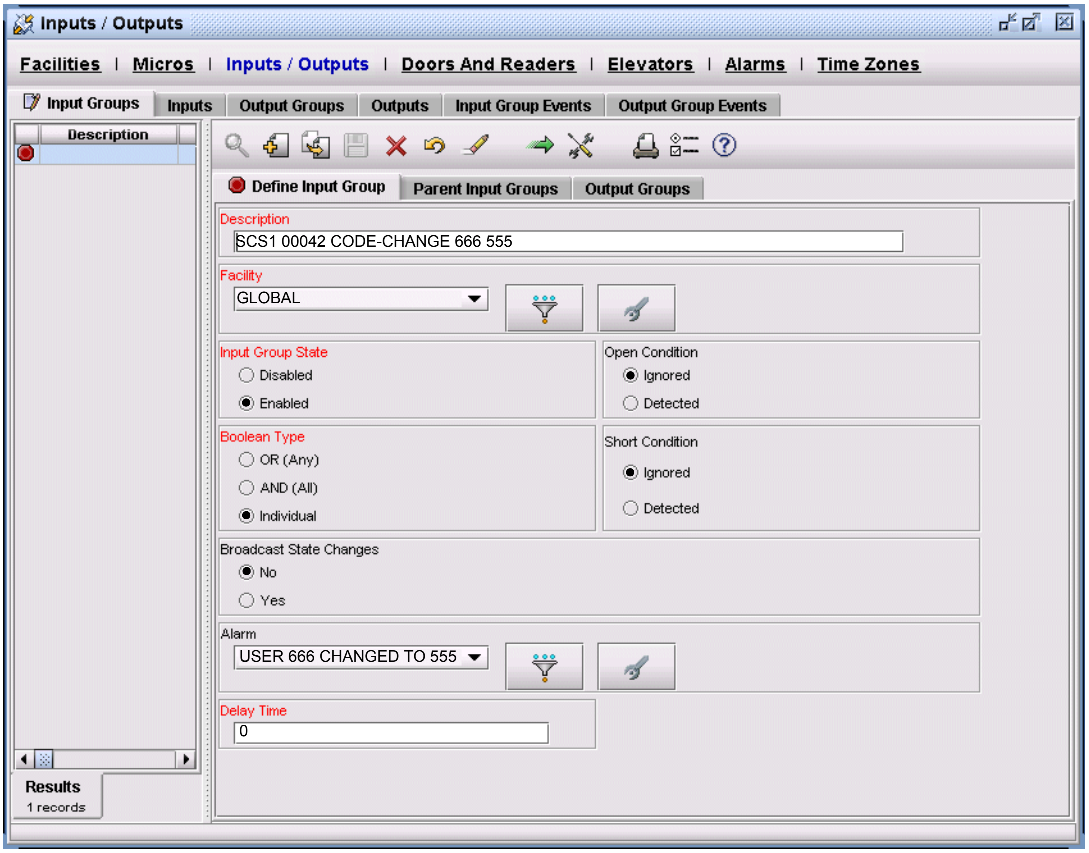
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each Input Group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Parent Input Group	should all be <BLANK>
Output Group	should all be <BLANK>

3. Click **Save**.
4. Click **New** to add another Input Group.

Figure 49. Sample Input Groups Screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

Each DMP SCS-1 input group will need to be linked to an alarm record which can be routed to show up on the **Alarm Monitor** and be recorded by Alarm History. The linking is done through the **Input Group** form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the DMP SCS-1 interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the **Alarm Monitor**.

The alarm record description field should be used to further identify or describe the DMP SCS-1 input group to which it is going to be linked. Several input group records can be linked to the same alarm but it would be prudent to set up one alarm record for each input group record that has the same device and location. The description field has no restrictions or required format since all the unique information for a message type is located in the input group description. If there are similar alarm descriptions that apply to unique devices, then separate alarm records and input group records should be created for each unique device to be recognized.

For example, if you are going to be monitoring alarm messages and the four possible status conditions for a detector you would have four input groups that could point to one alarm record. The alarm record could further describe the location of the detector. An example of this alarm record is shown in *Figure 48*

The Alarm Routing should be set up to according to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select **None** from the **Set Alarm Routing** picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

- **Online** `Yes`
- **Reset Outputs** `Auto Reset Outputs`
- **Immediate Reset Input** `Yes`

   Set the priority, alarm routing, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the MONITOR for an alarm to show up on the Alarm Monitor.

3. Click **Save**.
4. Click **New** to add another alarm.

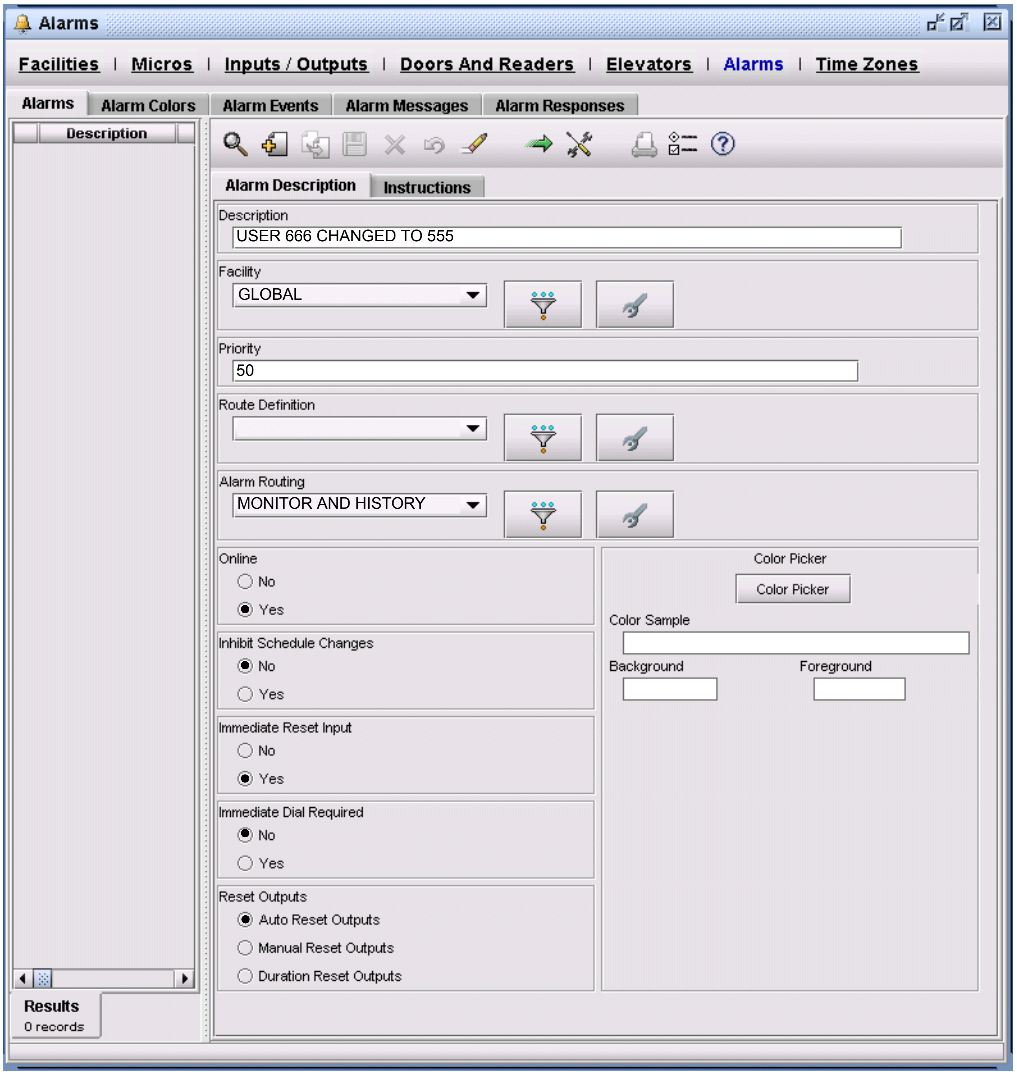


Figure 50. Sample Alarm Screen

Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

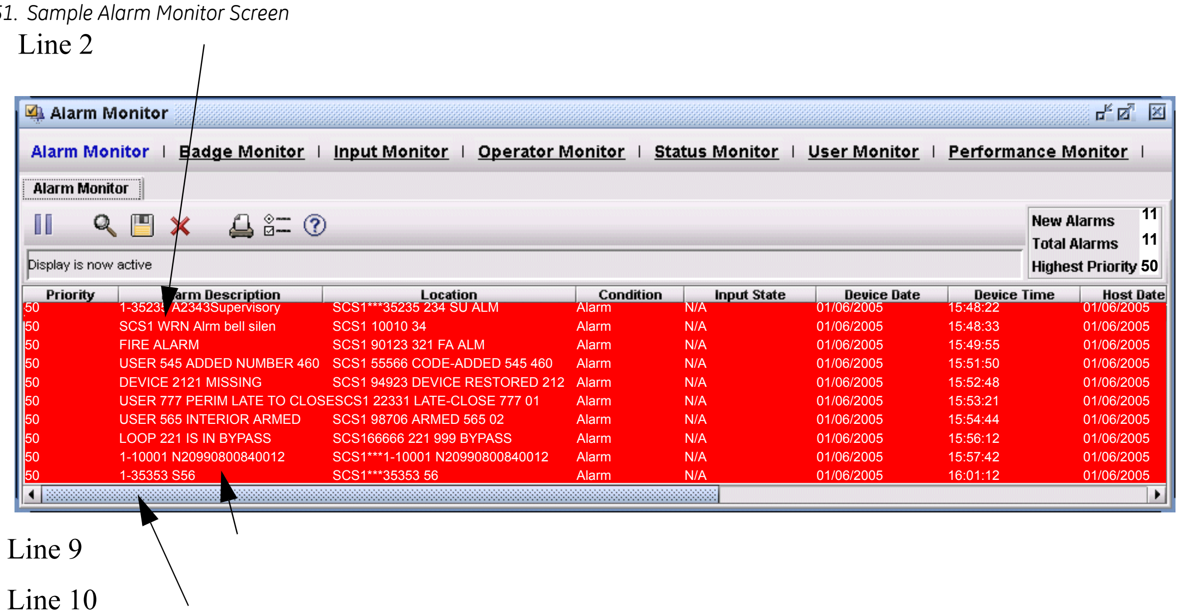
If you would like to trigger an output, i.e., door strikes, lights or sirens, when DMP SCS-1 receiver messages are received, you will need to configure an Output Group and a Output. The output group must be linked to the input group for the SCS-1 message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the **Outputs** form may not apply.

Monitoring alarms

You are now finished with the basic configuration of the SCS package. The SCS-1 messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect **Alarm Monitor**. Recognized alarms get recorded to the alarm history database table providing a permanent record of the alarm event. For any alarm to be monitored or recorded, the appropriate routing must be selected from the **Alarms** form for each alarm.

The operator will be able to respond and remove the alarm conditions from the monitor. Certain **Alarm Monitor** fields that are displayed may not apply to SCS-1 alarms depending on the mapping that is designed for the interface. The information of most use to an operator will be the Alarm Description and **Location** columns which correspond to the Alarm and Input Group record description fields respectively. From this information the operator should be able to tell what type of device, status, and location of the reported alarm. The complete message of the condition should be read from the SCS-1 system or from a printer hooked up to that system.

Figure 51. Sample Alarm Monitor Screen



The preceding figure of the **Alarm Monitor** shows a possible set of alarms for an interface using the SCS-1 Input Group Prefix. As previously mentioned in the manual, known account numbers of known message types will generate the Alarm Description to which the Input Group Description maps. For this interface, the **Location** column on the **Alarm Monitor** contains Input Group Descriptions.

Known alarms will contain (for this particular **Alarm Monitor** screen), `SCS1 <description>` in the **Location** column, that is, the Input Prefix followed by specific information extracted from message received

from the SCS-1 receiver. Line 2 from the **Alarm Monitor** above is an example of an `S` alarm for a known account number.

For 'Unknown' alarms of a known message type for which an account number, user number, etc. entry was not generated by `scsgen` or manually, the Location column will contain the Input Group Prefix followed by three asterisks, and whatever information we normally extract from that type of message for the Input Group Description. The **Alarm Description** column will contain as much of the message that was received from the SCS-1 receiver, up to 60 characters. Line 10 from the **Alarm Monitor** in *Figure 49* is an example of this (an `S` message type for an unknown account number).

For 'Unknown' alarms of an unknown message type, the **Location** column will contain the Input Group Prefix followed by three asterisks, and the message received from the SCS-1 receiver, up to 60 characters. The Alarm Description will contain the message received from the SCS-1 receiver, up to 60 characters. Line 9 from the **Alarm Monitor** above is an example of this (the `N` type message is unknown).

Testing the interface

Once the input groups and alarm database records have been set up and the interface is running it should be tested to make sure messages are being correctly recognized by the interface. The **Alarm Monitor** should receive the appropriate messages if they have been set up correctly. If the Alarms are not being shown on the **Alarm Monitor**, then the appropriate input group description should be checked to make sure that it follows the format specified for that message type listed under the *Adding or modifying input groups* section of this document. Make sure the appropriate Input Group prefix is being used in the description field and that it matches the one established upon installation in the `scs_XX.cfg` configuration file.

Actual device testing should be performed for those devices that are going to be monitored.

If there is a printer hooked up to the DMP SCS-1 receiver, then the resulting messages that are being monitored by the interface can be compared against the printed output in terms of the parts of a message that are used to make up an input group or alarm record description field. If there are messages that are not being recognized by the interface that have been set up to do so and they are being printed, then call GE Security Customer Support for further assistance in debugging the problem.

Advanced configuration

The DMP SCS-1 interface software supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/scs_ttyN.cfg
/cas/db/text/scs_signals_ttyN.cfg or /cas/db/text/scs_signals.cfg
/cas/db/text/scs.redundant.cfg
```

where `ttyN` is the name of the `tty` port specified for the interface.

/cas/db/text/scs_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the DMP SCS-1 device attached to the `ttyN` port.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a DMP SCS-1 device attached to the `/dev/tty5`:

```
#
#             scs_tty5.cfg
#             Copyright (C) 1995-2003 GE Interlogix - CASI
#              All Rights Reserved.
# This file generated by the following installation script.
#
# scs.inst 1.5 5/14/02
#
# This file contains the configuration information for the SCS alarm
# interface. Each interface that is running on a Picture Perfect
# system must have its own configuration file which contains the
# information on the specific serial line port the interface is going
# to read from. It also contains the unique input group prefix that
# the interface will use to recognize specific input group database
# records using this prefix.
#
# The InpGrpPrefix parameter is a required parameter in the
# configuration file. This parameter is the prefix that must be used
# in the description field for all input groups that are to be
# recognized by the interface. If this parameter is changed here it
# must be changed for all the input groups that are using it as a
# prefix. This prefix is case sensitive so the declaration in here
# must match the one used in the input group description. This
# description must not exceed 4 characters and the last character or
# characters should be numeric. The input group prefix declared in
```

```
# here will be read when the interface is started. If more than one
# interface is installed then the input group prefix must be unique
# in each configuration file.
#
# An example prefix would be “SCS1” and the next interface that is
# installed could be “SCSI2”
#
# The following values are unique to the SCS interface, do not change
# unless instructed by GE Interlogix - CASI
Icanon                           n
NumberOfDatabaseSlots            20
FirstInputGroupNumber            1067
FirstAlarmNumber                 116
#
# The following values are setup based on your installation responses.
#
InpGrpPrefix                     SCS1

PortName                         /dev/tty5
PortBaud                         9600
CharacterSize                    8
Parity                           n
StopBits                         1
Xon                              n
Xoff                             n

UserNumberLen                    3
```

/cas/db/text/scs_signals_ttyN.cfg or /cas/db/text/scs_signals.cfg

This file contains signals that are to be ignored by the SCS interface. The `/cas/db/text/scs_signals.cfg` file is the default signal configuration file. This file is provided when the interface is installed, as a signal configuration file is required for the interface to run successfully. If only the default signal configuration file is present, all of the SCS interfaces configured on the host will use the same file, and all will ignore the signals specified in the file. If one of the interfaces requires a specific set of signals to be ignored, then the `/cas/db/text/scs_signals.cfg` file should be copied to `/cas/db/text/scs_signals_ttyN.cfg`, where `ttyN` is the port to which that copy of the interface is attached. The signals to be ignored by that copy of the interface should then be added to the file. The `/cas/db/text/scs_signals_ttyN.cfg` file takes precedence over the `/cas/db/text/scs_signals.cfg` default file.

The following are the contents of the default signal configuration file `/cas/db/text/scs_signals.cfg`, provided at installation.

```
# @(#) sccs_signals.cfg 1.1 05/14/01
#
# Description:
#
#             This file contains a list of signals which the application will
#             ignore and just send back an acknowledgement that it was received.
#
# File Layout:
#
#             - One signal per line
#             - Signal name will start in column 1.
#             - A maximum of 32 signals can be entered into this file to be
#               ignored.
#             - Comments must be on a separate line and start with a pound
#               sign (#) in column 1.
#             - Comments must be less than 255 characters in length.
#
# The following are examples, where the S07, S88 and S99 signals would
# be ignored, if they weren’t preceded by a '#' comment symbol:
#
#S07
#S88
#S99
```

To have all copies of the interface ignore signals S07, S88, and S99 (except the interfaces for which there is a specific `/cas/db/text/scs_signals_ttyN.cfg file`), remove the comment (#) at the beginning of the lines. Any other signals to be ignored should be added to the file, starting in column 1.

/cas/db/text/scs.redundant.cfg

This presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following are the contents of a sample SCS redundant configuration file.

```
#            scs.redundant.cfg 1.5
#
#            Copyright (C) 1995-2003 GE Interlogix - CASI
#            All Rights Reserved.
#
# scs.redundant.cfg 1.5 05/14/02
#
# This file contains the configuration information for the SCS
# ALARM interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper                    Y
RedundantHosts                   primary1,backup1
```

Interface data file backup and restore

The DMP SCS-1 interface software requires several data files for its operation. These files are created during the software installation process and are summarized in Table 11 below. Normal use of the interface software may cause changes to one or more of these files. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The DMP SCS-1 software installation procedure automatically updates the Picture Perfect `base` backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the DMP SCS-1 interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 11. DMP SCS-1 interface data files

Data File Name	Description
`/cas/db/text/scs_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/scs.redundant.cfg`	DMP SCS-1 redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.
`/cas/db/text/scs_signals_*.cfg`	**Signals to ignore** configuration file for a specific copy of the SCS interface (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/scs_signals.cfg`	**Default signals to ignore** configuration file. Unless overridden by a specific signal configuration file, this file will apply to all copies of the SCS interface installed.

Appendix D Configuring a Commend interface

This appendix provides information on configuring the Commend interface to Picture Perfect which acts as a secondary monitoring system for the intercom system and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The Commend interface to Picture Perfect acts as a secondary monitoring system for the intercom system and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

The Commend Intercom system communicates with the Picture Perfect host through a serial line connection. Messages or alarms recognized by the intercom interface are looked up in the Picture Perfect database using the input group table. Picture Perfect will have to be set up with the appropriate input groups and alarms before they can be recognized. Optionally an output group and associated outputs can be tied to an input group. This is the standard method for setting up other hardware on a Picture Perfect system. The details of setting up the appropriate database records will be covered in more detail in the section *Configuration* on page 99.

The communication from the intercom system to the host is unidirectional. No handshaking is required for the interface. The protocol of the interface is the serial transfer of information one line at a time.

Redundant systems

The Commend interface to Picture Perfect supports operations in a redundant Picture Perfect environment, where two hosts have connectivity to a single intercom controller. Connectivity is achieved using a splitter between the Picture Perfect system and the intercom controller. This allows the physical connection of the intercom system to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Commend interface software executes on both Picture Perfect hosts and both receive alarm notifications from the intercom controller. However, only the interface software executing on the primary host processes the alarms. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the intercom controller.

Software requirements

The software requirements for the Commend Intercom system interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Commend interface (`commend`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Redundant System (`pprs`) package
- Picture Perfect Commend interface (`commend`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Commend Intercom controller, provided by the manufacturer.

  Refer to your intercom manual for dip switch settings. Use the default settings.

  Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Commend communication program is started.

- Cable to connect the Picture Perfect system to the Commend console port. Refer to *Figure 37*.

Figure 36. Cable pinouts: Picture Perfect system to intercom system (DB25F to DB9M)

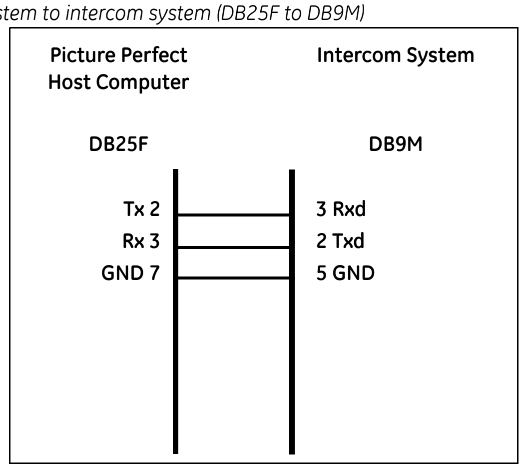
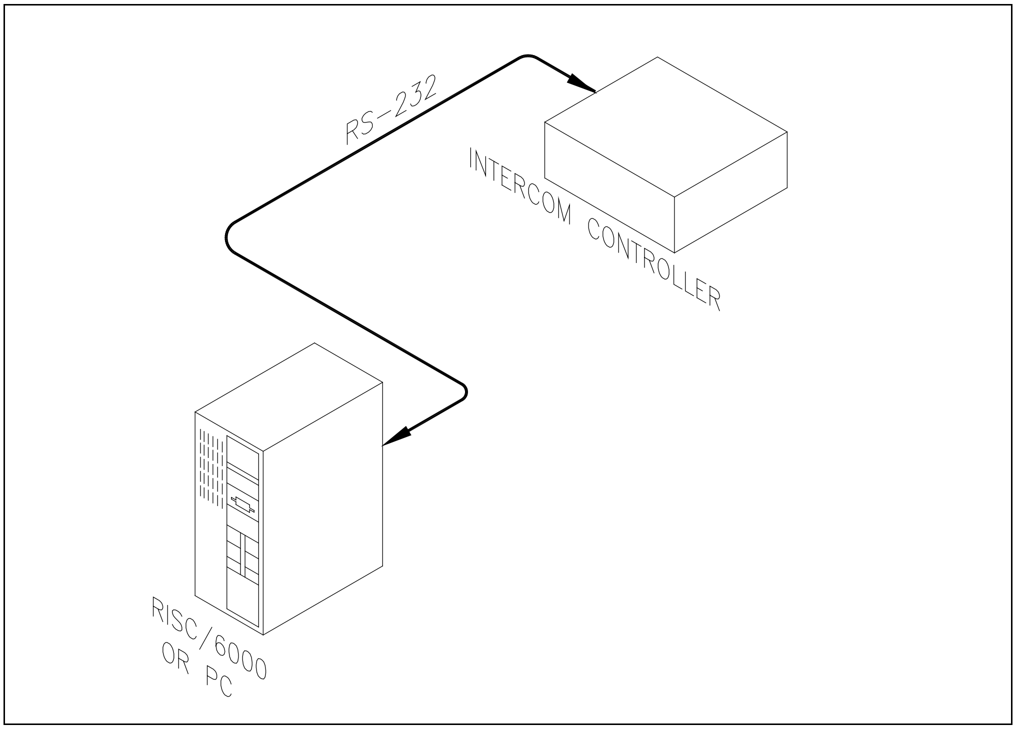


Figure 37. Overview of the Picture Perfect and Commend interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Commend Intercom controller, provided by the manufacturer.

  Refer to your intercom manual for dip switch settings. They should be set to the default.

- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

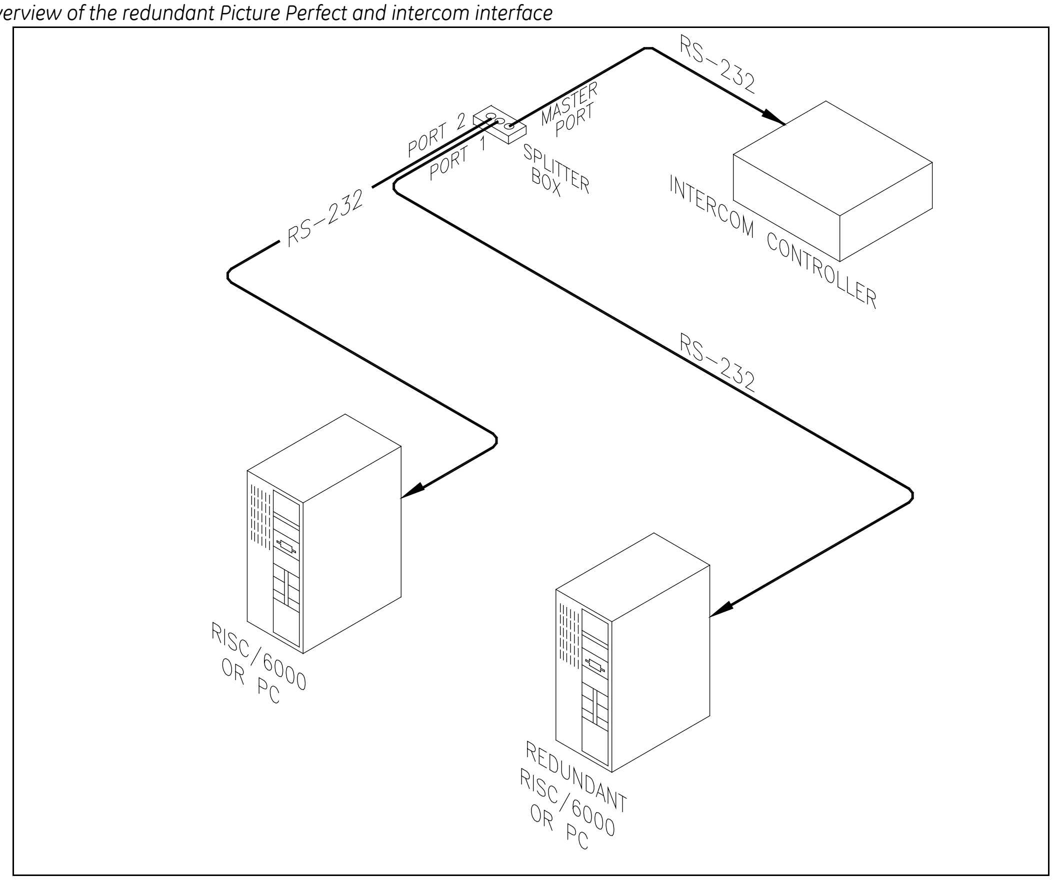
This configuration is done automatically when the Commend communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 38*.

Figure 38. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)

Picture Perfect System DB25F	Splitter Port DB25M
1	1
2	2
3	3
4	4
5	5
7	7
8	8
20	20

Figure 39. Overview of the redundant Picture Perfect and intercom interface



Configuration

The Commend interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. The messages used by the Commend interface were derived from the Commend protocol as described in *Commend Intercom System Message Structure* on page 117. These messages must be configured on the Picture Perfect system.

There are two methods available to configure these messages:

1. Automatically using the `cmdgen` data generator tool
2. Manually using Picture Perfect

If you plan to enter many messages at once, we strongly recommend you use the `cmdgen` command line tool. Using `cmdgen` exclusively to create or modify data records will enable you to keep track of the specific messages that are being monitored for a particular panel on a specific port. This tool is explained in detail in the following section. However, if you choose to use Picture Perfect to insert the database records, this procedure is explained starting on page 110 with the section entitled *Using Picture Perfect to configure the Commend interface*.

Note: Adding outputs and output groups must be done manually using the Picture Perfect graphical user interface.

Using cmdgen

The command line data generator tool, `cmdgen`, can be used to install or uninstall database records that are associated with the Commend Intercom System alarm interface. It is part of the Commend alarm interface package for Picture Perfect and is available when that package has been installed.

The Commend intercom system is capable of producing a large number of messages for all of the control panels and doors that may be installed. For Picture Perfect to monitor the numerous message combinations would require a large number of input group and alarm database records to be entered on the system. To add to the complexity, there may be more than one Commend Intercom System interface running on a Picture Perfect system. The `cmdgen` tool will aid in the maintenance aspect when there are multiple Commend Intercom System interfaces installed and running. When a Commend interface is added or removed the tool can be used to quickly install or uninstall those database records associated with a particular interface. This is possible by carefully segregating the input group and alarm database records for each Commend interface running on the Picture Perfect system.

The install portion of this tool is explained in the next section. See *Cmdgen – uninstall* on page 108 for an explanation of the uninstall portion.

Cmdgen – Install

The install portion of the tool generates input group and alarm database records. Before running the install program, you will need to:

- Create an input file.
- Know the input group prefix.
- Create a list of the Blocks/Stations that are going to be monitored. This kind of report can be obtained from the Commend Intercom system.
- If necessary, create a facility specifically for use with the Commend interface.

Input file

An input file is required when using the install portion of the `cmdgen` tool. It describes the types of messages to be monitored by the Commend alarm interface. The input file is a text editable file that must be created prior to running the tool. The installation portion of the tool will ask you the name of the input file you want to use. The input file will be parsed by the tool and the appropriate input group and alarm records will be created. If the input specifies activation of CCTV devices, the appropriate definition records will be generated and appended to the mapping file specific to each CCTV switcher interface. The CCTV switcher interface tasks can be signalled to access the new information, making CCTV control active with the new information. The format and rules for the file are discussed in the following sections.

To create an input file you will need to know:

- The version of Picture Perfect you are running. This is very important because the layout of the database records may be different depending on the version of Picture Perfect that is running and this tool can generate different output depending on the version.
- The blocks/stations to be monitored.
- For each block/station, the alarm condition generated for the various types of communication activities possible, as discussed later.
- For each Alarm Condition generated, whether or not it requires a CCTV activation, the CCTV switcher, device name, and CCTV number.

The last three items comprise the data format part of the input file. With this information the `cmdgen` tool will generate and load the database with the appropriate input group and alarm database records.

Table 9, Supported CCTV switcher products contains a list of the current nine CCTV switcher products supported.

Table 9. Supported CCTV switcher products

Switcher name	Manufacturers product designation
allegiant	Burle Allegiant TC8*x*0*y*
allplex	Burle Allplex TC8928B
amdyn	American Dynamics
grundig	Grundig VAZ300
javelin	Javelin JO326HI
kalatel	Kalatel KTD-312
maxpro	MAXPRO RD-AT100 MAX1000
panasonic	Panasonic Proteus
panasonic550	Panasonic 550 WJ-SX550A
pelco pelcob	Pelco CM9750
viper	Vicon Viper VPS13xx

Picture Perfect version

The first line of the input file must contain the Picture Perfect version that is running. The version number is used by the `cmdgen` tool to determine the database input. The current versions that are supported by the `cmdgen` tool are:

- Picture Perfect 1.7, 2.0, 4.0, and 4.5 (AIX and Linux)

Input file data format

The lines of data that follow the version information should contain rows of delimited text data that define the block/station identifier, the message type, the alarm description and optionally a CCTV device or switcher name and the CCTV number. The delimiter character between fields must be the "|" symbol. There should be one line of data for each unique combination that is going to be monitored.

The format of a data record is as follows:

```
<Block>|<Station>|<MessageType>|<AlarmDesc>|<facility>|<cctvDeviceName>|<cctvNumber>|<port>
<Block>/<Station>
```

This is a four character identification number. Valid values for this field are FFF1 to 9999

`<MessageType>`

This is the type of Commend message and is one of the following:

```
21-22        (request)
10-30        (clear)
12-31        (acknowledge)
0A           (release)
1D           (duress)
```

Note: These message types are searched for in the Commend interface software when searching for the alarm record. The Commend software will be unable to locate any others without modification.

`<AlarmDesc>`

This is the unique alarm message text to be displayed on the Picture Perfect Alarm Monitor screen and/or logged to the history file.

`<facility>`

Facility id to use for the input group and alarm record that is created. If no facility is specified, the default facility id, specified by the user, will be used.

`<cctvDeviceName> and <cctvNumber> fields`

These fields if present, identify a CCTV switcher and which camera is to be controlled when the alarm occurs.

`<cctvDeviceName>`

Valid values for this field are defined in column 1 of *Table 9, Supported CCTV switcher products* on page 100.

`<port>`

The port on which the CCTV switcher is connected. Use only the tty portion of the name. For example, if the CCTV switcher is connected to
`/dev/tty4`, then use `tty4` as the port value.

Refer to *Appendix B, Configuring a CCTV interface* for information on how to specify CCTV information.

Example input file

The following is an example of an input file for a Picture Perfect system.

```
4.5
FF23|FF13|21-22|BLK 23 STA 13 Request|1|grundig|25510|tty3
FF23|FF13|10-30|BLK 23 STA 13 Clear|0
FF23|FF13|12-31|BLK 23 STA 13 Acknowledge|0
FF10|FFF3|21-22|BLK 10 STA 3 Request|10|grundig|10007|tty3
FF10|FFF3|10-30|BLK 10 STA 3 Clear|10
FF10|FFF3|12-31|BLK 10 STA 3 Acknowledge|10
FF23|FF13|0A|BLK 23 STA 13 Release|0|grundig|00301|tty3
FF23|FF01|1D|BLK 23 COD 01 Duress|0|grundig|00301|tty3
```

An example of the input groups and alarm records that are generated from one line of an input file is shown in the section *Input group and alarm records generated by cmdgen* on page 103.

Input file recommendations

Always keep the input file for future reference on how your system has been set up. It will be extremely useful in understanding what database records have been generated. It will be required information for Customer Support should you need help in configuring the interface.

DO NOT re-use the original input file that has had data added to it without doing an uninstall first. Un-installs are discussed in later sections. If you have new data for the generator and have not un-installed using `cmdgen`, then you should uninstall or put it in a separate input file.

Input file error checking

The input file will be checked for error conditions before any data records are generated. If an error occurs within the input file, the `cmdgen` tool will display the error on the screen. The type of error, the column it occurred in, and the line it occurred on in the input file will be given. The input file must be error free before any data records are generated.

Input group prefix

The Commend interface uses the input group prefix to search specific input group records for messages that are to be monitored. This input group prefix was established at installation time of the interface for every serial line that was configured. The prefix for the Commend interface is stored in the configuration file for that interface and is read every time it is started. With this in mind it is a requirement to know the input group prefix of the interface for which the `cmdgen` tool is going to generate database records. To determine this you must look in the appropriate `/cas/db/text/cmd_ttyN.cfg` file where `ttyN` is the tty name of the port for which the interface is configured. Examine the appropriate file and look for a line that starts with “InpGrpPrefix.” The value following this string is the input group prefix being used by the Commend interface for that port.

Input group prefix usage when installing

When using the install portion of the `cmdgen` tool, the input group prefix is used as the prefix for the description field for all input group records generated. Again, it should be stressed that the input group prefix used by the tool must match the Commend interface that is being targeted.

Input group prefix when un-installing

The input group prefix is used when using the uninstall portion of the `cmdgen` tool. All input group records that have descriptions that match the input group prefix (the first five characters) will be removed from the database. The Alarm records that each input group points to will be removed with one exception. If the Alarm record is linked to any other input group records outside of the ones to be removed, the tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records to which other input group records are linked.

Input group and alarm records generated by cmdgen

The input file processed by `cmdgen` produces input group and alarm database records that are inserted into the database when the tool is run. The input group records created are unique for each valid line in the input file. This is done by combining the input group prefix, From/To Station identification numbers, and communication activity information into the description field of an input group record. If optional CCTV information is specified, a new entry will be created and appended to the mapping table file for the specified CCTV switcher interface program. For example, let’s examine the first line of data in the example input file described earlier and assume an input group prefix of `cmd07`.

```
FF23|FF13|21-22|BLK 23 STA 13 Request|1|grundig|25510|tty3
```

This line would generate one input group record with the following value:

```
CMD07.FF23.FF13.21-22
```

One alarm record would be generated with the following description field:

```
BLK 23 STA 13 Request
```

The input group record would be linked to this alarm.

Since CCTV information has been provided, a new entry will be added to the `grundig` interface program mapping table file to enable control of `grundig` camera 255 in block 10 for this input group specification for the `grundig` switcher connected to port `/dev/tty3`. After CCTV switcher mapping table files are updated, signals may be sent to the CCTV switcher interface tasks to force a reload of the mapping files to make CCTV control for the Commend active.

There are obviously other important fields to an input group and alarm record that automatically get filled in by the generator. For the input group records, the following fields are set accordingly:

Delay Time	0
Boolean Type	Trigger on Input (Individual)
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Parent Input Group	should all be <BLANK>
Output Group	should all be <BLANK>

The default values for the alarm records are:

Controls	Alarm Online
Controls	Auto Reset Output
Alarm Routing	Monitor and History
Priority	50

Using cmdgen – install

Before you start:

- You must have root permission to run the `cmdgen` tool.
- The database must be running. The tool will check this when `cmdgen` is invoked.
- A valid input file must exist that contains the Picture Perfect version and data lines for the message types to be monitored for the described devices.
- You must know the input group prefix used by the Commend interface that is being targeted for data generation. See the section *Input group prefix* on page 102 for more information.

Follow these steps to use the cmdgen tool to install database records:

1. Log in as `root`.
2. Change to the directory where the input file is located.
3. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `cmdgen` tool and the database tools it uses.
4. Type: `cmdgen` Enter

   Messages similar to the following appear:

   ```
   Commend Data Generator 2.0
   ```

   If the Commend package was configured for operation in a redundant Picture Perfect environment, you will also see messages similar to the following:

   ```
   Redundant commend interface configuration detected:
   This host:                 primary1
   Other host:                backup1
   Redundant commend operation is ENABLED.
   The commend interface changes will be reflected on the other host.
   Would you like to (i)nstall or (u)ninstall data records?
   ```
5. To use the install option, type: `i` Enter

   The following messages will display.

   ```
   You have chosen to install database records:
   Please enter input file name:
   ```
6. Enter the name of your input file.

The input file you entered will be displayed and you will be asked to confirm it.

```
You entered cmd.inp as the input file name.
Is this correct (y/n)? [y]
```

7. Enter a `y` to accept or an `n` to change the name.

   If you entered `n`, you will be asked to re-enter the name. If you entered `y,` the following messages will display:

```
Enter the input group prefix to be used when creating the records.
It must be 4 to 5 characters with the last character(s) numeric.
For example: CMD07
NOTE:     This prefix must be the same one that is used by the
          interface that is being targeted. Refer to the documentation
          for more information about input group prefixes.
Enter the input group prefix:
```

8. Enter the name of your input group prefix.

   The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: CMD01
Is this correct (y/n)? [y]
```

9. Enter a `y` to confirm or an `n` to re-enter the prefix.

   If you entered `n`, you will be asked to re-enter the value.

   If you entered `y`, messages similar to the following will be displayed, regarding the selection of a default facility for the Commend interface:

```
**                                                                          **
**        Default Commend Facility assignment portion                       **
**                                                                          **
When the input_group and alarm records are created, they will require an associated
facility. You need to select the default facility that will be used when creating
the input_group and alarm records, if an explicit one is not specified.

The currently available (defined) facilities will be displayed, and you will need to
make a selection from the provided list. If you need to create a new facility
specifically for the Commend input_groups and alarms, then you should exit this
program, create the facility using the GUI, then re-run this program and then choose
that facility.
Do you wish to exit this program now (y/n)? [n]
```

10. Enter a `y` to exit the script or an `n` to enter a facility from the choices that will be provided.

    If you entered `y`, you will exit the program, and you may create a facility specifically for the Commend interface, if you so desire, then re-run the script.

If you entered n, a list of the currently defined facilities on your system will be displayed, and you will need to make a selection. If the number of facilities on your system exceeds 18, you will need to press Enter to continue through the list, until you get to the prompt. When you observe the facility that you desire to use by default with the interface, keep track of the number. This list will be similar to the following:

```
Acquiring facility list from database. Please wait...
The following facilities are defined on your system, and available to be chosen as
the default facility:
=================================================================
          1:   DEFAULT FACILITY
          2:   Building 1
          3:   Building 2
          4:   Building 3
          5:   Building 4
          6:   BUILDING 5
          7:   BLDG 1,2,3,4,5 AND PARKING
          8:   BLDG 2 STUDIO
          9:   BLDG 2 DESIGN AID
          10:  Security Control Center
          11:  Head Office
          12:  Building 1 Garage
          13:  Building 2 Garage
          14:  Building 3 Garage
          15:  Building 4 Garage
          16:  Building 5 Garage
          17:  Head Office Garage
          18:  Penthouse
Press RETURN for more ...
          19:  B-1 COMP ROOMS
          20:  REGENT COURT
          21:  FAcility A
          22:  Facility B
          23:  Commend FAcility
Enter the value of the default Commend facility [1-23] ...: [1]
```

11. Enter the number of the default facility to use with the Commend interface. This value will be used when creating input_group and alarm records from the entries in the input file, for which a specific facility is not specified.

    The facility you selected will be displayed, and you will be asked to confirm it.

```
You have selected as the default facility:Commend Facility
Is this ok (y/n)? [y]
```

12. Enter a y to confirm , or an n to re-enter the default facility.

    If you entered n, you will be asked to re-enter the value.

    If you entered a y, the facility you selected and its id will be displayed, and the script will proceed to check the input data.

    If there are errors with the input data, they will be displayed, and you will need to correct those errors, then re-run the cmdgen script again to process the corrected input file.

If no errors are found, the `input_group` and `alarm` records will be entered into the Picture Perfect database. You will see messages similar to the following:

```
Default Facility chosen is [Commend Facility], id [35]
**..............................................................**
**....... End of Default Commend Facility assignment portion................**
**..............................................................**

Checking input group file data...
Checking alarm file data...
Installing Records...
DBLOAD Load Utility           INFORMIX-SQL Version 9.30.UC4
Copyright (C) Informix Software, Inc.m 1984-1997
Software Serial Number AAD#J328673
Table input_group had 11 row(s) loaded into it.
Table alarm had 11 row(s) loaded into it.
statement = UPDATE STATISTICS FOR TABLE input_group
statement processed OK
statement = UPDATE STATISTICS FOR TABLE alarm
statement processedigd=CMD07.FF10.FF11.12-31 cctvName=grundig cctv=00101 grundig
1240 261 1240 00101 grundig_tty3
Creating CCTV device grundig map addition file
/tmp/cmd_grundig.deltaigd=CMD07.FF23.FF13.12-31 cctvName=grundig cctv=00202
grundig 1243 264 1243 00202 grundig_tty3
igd=CMD07.FF13.FF23.12-31 cctvName=grundig cctv=00102
grundig 1246 267 1246 00102 grundig_tty3
igd=CMD07.FF23.FF13.0A cctvName=grundig cctv=00301
grundig 1248 269 1248 00301 grundig_tty3
igd=CMD07.FF23.FF01.1D cctvName=grundig cctv=00301
grundig 1249 270 1249 00301 grundig_tty3
Generated 5 new entries for CCTV switcher device grundig map table
Successfully appended new entries to switcher device grundig map table!
Installation complete.
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

13. Enter `y` to inform the system or `n` to not inform the system.

    If you entered `n`, the changes just made will not be sent to the interface until the next time it is restarted and you will exit the script.

    If you entered `y,` a message will be sent to the running interface and the new map changes will be re-read and take effect immediately. Messages similar to the following will appear, then you will exit the script.

```
Sending signal USR2 to task grundig_comm...
Sending signal USR2 to task msan...
```

Using cmdgen to generate new block/station data after an initial installation

If there are new block/stations to be monitored by the Commend interface after an `cmdgen` installation, then one of the following methods should be used when using the `cmdgen` tool. If you are going to be changing block/station data in the input file for existing database records, then use Method 2 below.

Method 1

1. Create a new input file with the new data lines.
2. Invoke `cmdgen` and use the new input file.

Method 2

1. Use `cmdgen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix.

   Note: Any input group using the targeted input group prefix to be un-installed that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file. Output and output group information is lost whenever the cmdgen tool is used to uninstall database records.

2. Modify or add the new block/station data to the input file.
3. Invoke `cmdgen` and use the modified input file to re-create the data records.

Cmdgen – uninstall

This portion of `cmdgen` removes the database records associated with a specific Commend interface. Before running the uninstall program, you will need to know the input group prefix.

Note: It is a good idea to backup the database before using the uninstall portion of the cmdgen tool. This can be done through the Control/Backup form. See your Picture Perfect documentation for more details.

Input group prefix

All input group records that have descriptions that match the input group prefix (the first five characters) will be removed from the database. The Alarm records that each input group points to will be removed as well but with one exception. If the Alarm record is associated with any other input group records outside of the ones to be removed, no records will be removed and the user will be notified of this condition. This situation must be corrected by the user before any records can be removed using the `cmdgen` tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it is does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records that other input group records are linked.

Note: Any input group using the targeted input group prefix to be un-installed that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file.

Using cmdgen – uninstall

Before you start:

- You must have `root` permissions to run the `cmdgen` tool.
- The database must be running. The tool will check this when the `cmdgen` is invoked.
- You must know the input group prefix used by the Commend interface that is being targeted for un-installation.

Follow these steps to use the cmdgen tool to un-install database records:

1. Log in as `root`.
2. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `cmdgen` tool and the database tools it uses.
3. Type: `cmdgen` Enter

   Messages similar to the following appear on the screen:

   ```
   Commend Data Generator 2.0
   ```

   If the Commend package was configured for operation in a redundant Picture Perfect environment, you will also see messages similar to the following:

   ```
   Redundant commend interface configuration detected:
             This host:          primary1
             Other host:         backup1
   Redundant commend operation is ENABLED.
   The commend interface changes will be reflected on the other host.
   Would you like to (i)nstall or (u)ninstall data records?
   ```

4. To use the install option, type: `u` Enter

   The following messages will display:

   ```
   You have chosen the UN-INSTALL portion of this script. You must enter the input
   group prefix to un-install the Commend database records. This is the first 4 to 5
   characters used in the description field of the input group records. Entering this
   prefix will result in the removal of the input group and associated alarm records
   from the database.
   If running multiple interfaces make sure you enter the prefix that matches the input
   group prefix used for that particular interface. If properly installed each Commend
   interface should have a different input group prefix that is used specifically for
   that interface.
   Do you know the input group prefix and want to continue (y/n)? [y]
   ```

5. To continue, press `y.` To stop, press `n.`

   If you chose to continue, the following message will display:

   ```
   Enter the input group prefix:
   ```

6. Enter the input group prefix.

   The input group prefix you entered will be displayed and you will be asked to confirm it.

   ```
   The input group prefix you entered was: CMD07
   Is this correct (y/n)? [y]
   ```

7. To continue, press `y`. To stop, press `n`.

   If you chose to continue, the records will be deleted and you will see messages similar to the following:

```
Making alarm id checks...
Deleting input group and alarm records...
The following log files contain the SQL statements and errors logged during the
delete process:

/tmp/cmd_inpgrp_del.log
/tmp/cmd_alarm_del.log
Successfully deleted entries from switcher device grundig map file
Un-install completed!
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

8. If this script was called from the removal script, then select `n` to not inform the system now since it's not running. When re-started, the changes will take effect. If the Picture Perfect system is running, select `y` if you want these changes to take effect now, or `n` if you want them to take effect at the next restart.

   If `n` was selected, you will return to the `#` prompt or back to the removal script.

   If `y` was selected, messages similar to the following will appear then you will exit the script:

```
Sending signal USR2 to task grundig_comm...
Sending signal USR2 to task msan...
```

Using Picture Perfect to configure the Commend interface

For a successful configuration, follow these steps:

1. Adding or modifying input groups for the three possible message types for each block/station to be monitored.
2. Adding or modifying alarms.
3. Adding or modifying output groups and outputs, if desired.
4. Monitoring alarms.

Adding or modifying input groups

The input group record description is the key to identifying specific Commend protocol messages. The format of the description is defined such that it can be set up to identify the specific message types coming from the Commend system for each block/station as identified in the Commend protocol as described in *Commend Intercom System Message Structure* on page 117.

The following is the structure of an input group record description:

```
<IGP>.<Block>.<Station>.<MessageType>
```

`<IGP>`

The 5 character input group prefix described on page 109.

`<Block>/<Station>`

This is the 4 character block/station identifier; valid values are FFF1 through 9999 as described in *Commend Intercom System Message Structure* on page 117.

`<MessageType>`

This is the type of Commend activity and is one of the following:

```
21-22                         (request)
10-30                         (clear)
12-31                         (acknowledge)
0A                            (release)
1D                            (duress)
```

Note: These message types are searched for in the Commend interface software when searching for the alarm record. The Commend software will be unable to locate any others without modification.

There must be a single period between the parts of the input group record description and spaces are not allowed anywhere within the description. This structure must be followed in defining input group records so that the Commend interface software can look for matches in the database using input group descriptions constructed from protocol messages received from the Commend system.

For each block/station that is to be monitored, you should define an input group record for each message type. An example of the input group record descriptions to monitor Block FF23/Station FF13 for a Commend interface using input group prefix CMD07 is:

```
CMD07.FF23.FF13.21-22
CMD07.FF23.FF13.10-30
CMD07.FF23.FF13.12-31
CMD07.FF23.FF13.0A
CMD07.FF23.FF13.1D
```

See *Figure 40, Sample input groups screen* on page 112 for an input group record containing a valid input group description.

The procedure for adding or modifying input groups is described below. Note that alarm records must be created prior to input group records as you must specify the alarm when defining the input group record. A description of the procedure for defining alarm records may be found in *Adding or modifying alarms* on page 113.

Note: Be aware that input groups and associated alarms that are created manually will be removed if the uninstall portion of the cmdgen tool is run since it removes records according to the input group prefix. For all input groups and associated alarms that are created, an entry should be added to your input file so that it may be automatically recreated at a later date.

Adding an input group

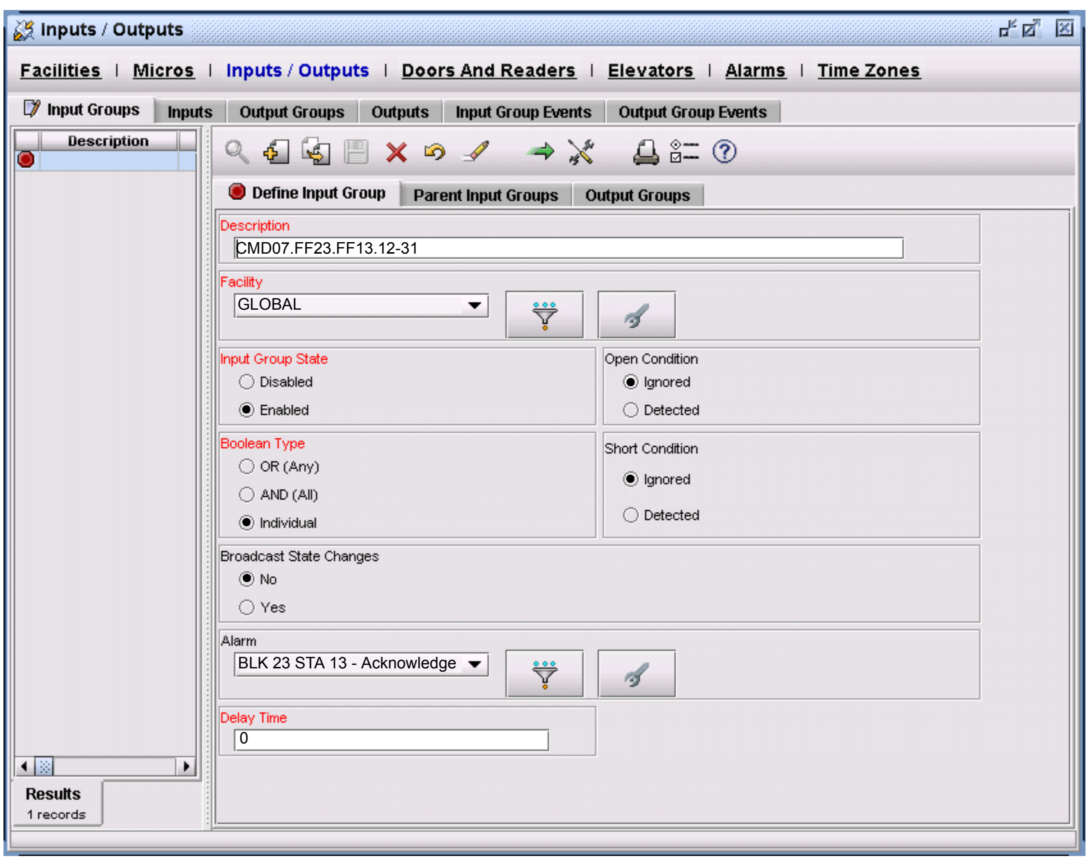
Follow these steps to add an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups** tab.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

   - Delay Time 0
   - Boolean Type Individual
   - Input Group State Enabled
   - Open Condition Ignored
   - Short Condition Ignored
   - Broadcast State Changes No
   - Alarm (Should point to the alarm record generated for this input group)
3. Click **Save**.
4. Click **New** to add another input group.

Figure 40. Sample input groups screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups** tab.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by pressing **Save**.

Adding or modifying alarms

Each Commend input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded by Alarm History. The linking is done through the Input Group form after the Alarm record has been established. Creating alarm records that the input group records are linked to is required for the Commend interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the Alarm Monitor.

The alarm record description field should be used to further identify or describe the Commend input group to which it will be linked. Several input group records can be linked to the same alarm (for example, one alarm per block/station input group record), but it would be prudent to set up one alarm record for each input group record. The alarm description field has no restrictions (other than a maximum length of 30 characters) or required format since all of the unique information for a Commend protocol message is located in the input group description. However, each alarm description in the database must be unique.

The recommended format for alarm descriptions is to identify the block/station and the type of action that occurred. For the example input group descriptions given previously, the corresponding alarm descriptions might be as follows:

```
BLK 23 STA 13 - Request
BLK 23 STA 13 - Clear
BLK 23 STA 13 - Acknowledge
BLK 23 STA 13 - Release
BLK 23 COD 01 - Duress
```

An example of a valid alarm record is shown in *Figure 41, Sample alarm screen* on page 114. Alternatively, a single alarm could be defined for all three actions as follows:

```
BLK 23 STA 13
```

The Alarm Routing should be set to the desired routing. If you do not want a particular alarm to be routed to the printer or history file then you should select None from the Set Alarm Routing picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

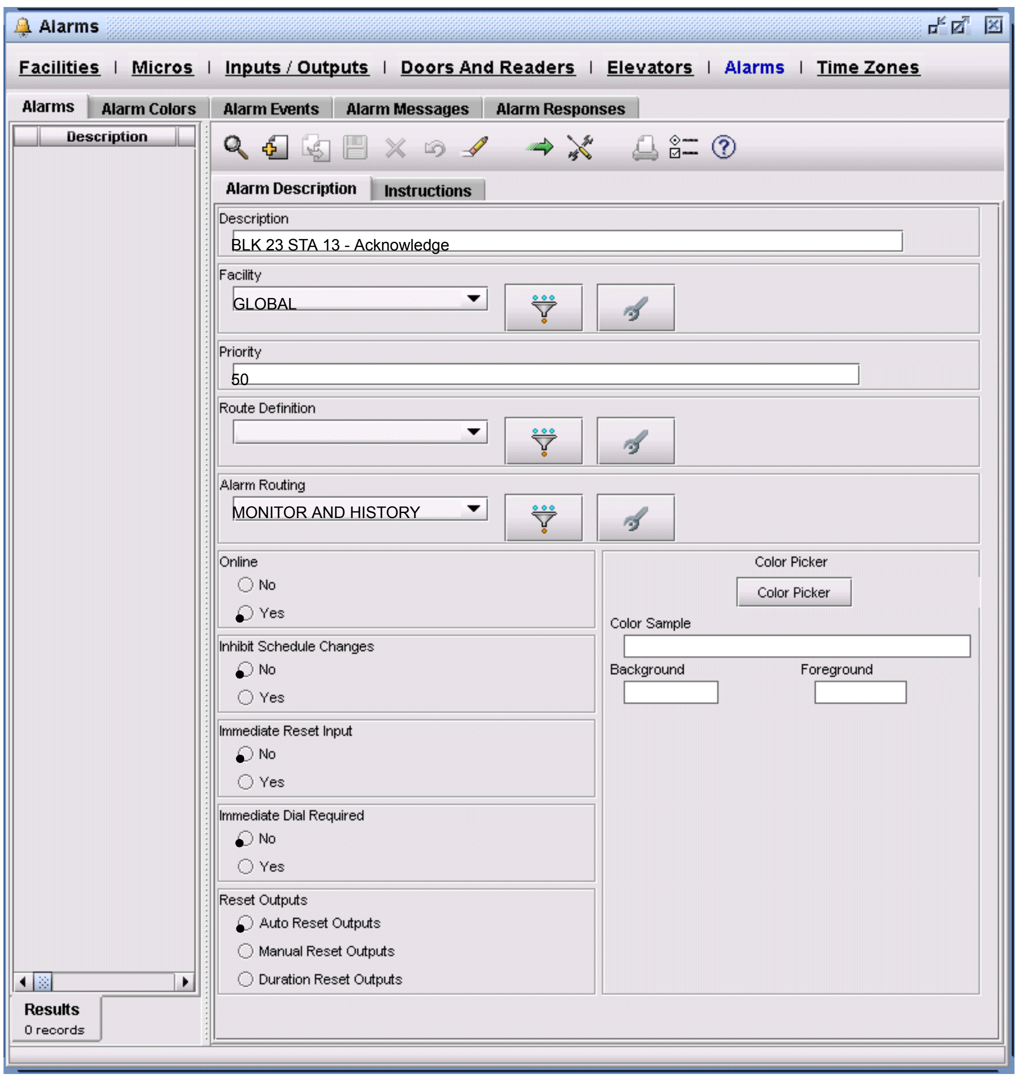
   - Online — Yes
   - Reset Outputs — Auto Reset Outputs

   Set the priority, alarm routing, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the Monitor for an alarm to show up on the Alarm Monitor and to allow control of CCTV cameras.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 41. Sample alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, that is, door strikes, lights or sirens, when Commend messages are received, you will need to configure an Output Group and a Output. The output group must be linked to the input group for the message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the Outputs forms may not apply since this is a one way communication between the Commend Intercom system and Picture Perfect.

Note: Configuring output groups and outputs is optional. If the cmdgen tool is used to uninstall database records, any outputs and output groups that you defined will be lost.

Monitoring alarms

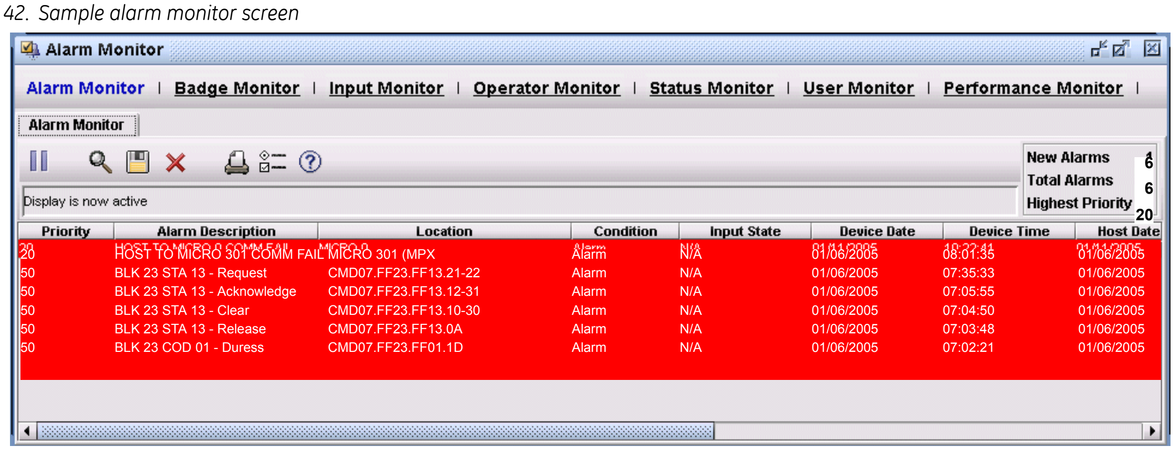
You are now finished with the basic configuration of the Commend interface. The Commend messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell the From/To station and action from the reported alarm.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the Commend system since this is a one way data/information communication.

All messages recognized by the Commend interface will show a condition of Alarm and an Input State of N/A. As with other Picture Perfect alarms that come into the Alarm Monitor the Count column will increment for those alarms that have come in multiple times. To remove Commend alarms from the Alarm Monitor, use the remove or purge button to remove all alarms or double-click on the alarm to bring up an individual window and remove them individually. The time displayed in the Alarm Monitor is the time that Picture Perfect received the message from the Commend system.

Figure 42. Sample alarm monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system that used the input group prefix CMD07 and has appropriate input group and alarm records to recognize the conditions coming from the Commend system. Below is an explanation of the information shown by the display.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created manually or by the cmdgen tool. The Location column corresponds to the description field of the appropriate input group record which was created manually or by the `cmdgen` tool.

Line 2

The Commend system has received either a call request 21 or 22 for Block FF23/Station FF13.

Line 3

The Commend system has received either an acknowledge 12 or 31 for Block FF23/Station FF13.

Line 4

The Commend system has received either a clear 10 or 30 for Block FF23/Station FF13.

Line 5

The Commend system has received a door release 0A for Block FF23/Station 13.

Line 6

The Commend system has received a duress code 1D for Block FF23.

Testing the Interface

Once the input groups and alarm database records have been set up and the interface is running, it should be tested to make sure messages are being correctly recognized by the interface. The Alarm Monitor should receive the appropriate messages if they have been set up correctly. If the Alarms are not being shown on the Alarm Monitor, then the appropriate input group description should be checked to make sure that it follows the format specified for that message type listed under the *Adding or modifying input groups* on page 110. Make sure the appropriate Input Group prefix is being used in the description field and that it matches the one established upon installation in the `cmd_ttyN.cfg` configuration file. Also, check the alarm routing field of the corresponding Alarm Record to make sure that the routing includes Monitor.

If there is a printer hooked up to the Commend system, then the resulting messages that are being monitored by the interface can be compared against the printed output in terms of the parts of a message that are used to make up an input group or alarm record description field. If there are messages that are not being recognized by the interface that have been set up to do so and they are being printed, then call Customer Support for further assistance in debugging the problem.

Commend Intercom System Message Structure

All messages that will be recognized by the Commend interface software follow a uniform structure. This structure consists of a message containing 20 bytes. The first character of a message is an STX(02) hex character synchronization marker and the last is an ETX(03) hex character. The following is a representation of this structure:

```
<STX>'RRPPTTXXXXYYYY$$SS'<ETX>

Where:
    STX       hex:                  (02 hex) start of text marker
    RR        ascii:                the receiver of the message
    PP        ascii:                the program number for intercom messages
    TT        ascii:                the sender of the message
    XXXX      ascii:                the Block number
    YYYY      ascii:                the Station number
    $$        ascii:                the Message Type
    SS        ascii:                the Checksum
    ETX       hex:                  (03 hex) end of text marker
```

Valid values for the block/station number are FFF1 to 9999.

The types of message lines as defined by the `<$$>` field that are accepted and processed by the Commend interface software are described below.

Table 10. Description of Message Lines

Message type	Description
21	Request
22	Request
10	Clear
30	Clear
12	Acknowledge
31	Acknowledge
0A	Release
1D	Duress

The checksum `<SS>` is computed by subtracting all data bytes plus the `ETX` from hex `FF`. The checksum algorithm that is used by the Commend interface software is described below.

```
checksum SS hex = FF - RR - PP - TT - XX - XX - YY - YY - $$
Where:
FF           hex:                FF.
RR           hex:                the receiver of the message.
PP           hex:                the program number for intercom messages.
TT           hex:                the sender of the message.
XXXX         hex:                the Block number.
YYYY         hex:                the Station number.
$$           hex:                the Message Type.
```

Note: All ASCII bytes are converted to hex nibbles before the subtraction.

Appendix F Configuring an EST interface

This appendix provides information on configuring the EST interface to Picture Perfect which acts as a secondary monitoring system for the EST panel and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The EST interface to Picture Perfect acts as a secondary monitoring system for the EST panel and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

The Picture Perfect Alarm Monitor may be used to monitor messages from the firepanel. The EST interface acts as a filter that recognizes predefined alarm conditions coming in over the serial line. When an alarm condition has been detected, the EST interface picks up a unique panel/device id contained in one of the message lines from the serial port. This unique panel/device id must have been previously set up through the Input Group form in Picture Perfect, along with an associated alarm from the Alarm form. If there is a match, meaning that the panel/device id was found, along with an alarm, an alarm message is sent to be processed by Picture Perfect, and displayed on the Picture Perfect Alarm Monitor. The Picture Perfect Alarm Monitor will display the Input Group Prefix for the specific instance of the EST interface, the unique panel/device id, and a user defined alarm description. Further message information should be obtained from the primary monitoring device, which is the EST panel.

Communication from the EST firepanel to the Picture Perfect host is accomplished using a serial line connection. The communication is unidirectional, meaning the interface only receives data from the firepanel and does not send anything back. The serial line used by this interface will be through the EST panel printer ports.

Messages or alarms recognized by the EST interface are looked up in the Picture Perfect database using the input group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group.

Redundant Systems

The EST interface to Picture Perfect also supports operations in a Picture Perfect Redundant System (PPRS) environment where two hosts have connectivity to a single fire alarm system. Connectivity is achieved using a splitter between the Picture Perfect system and the fire alarm system. This allows the physical connection of the fire alarm system to an
RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the EST system interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host processes the alarm and forwards it to the Alarm Monitor. Normal pprs processing will result in the alarm appearing on the backup host's Alarm Monitor. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then process the alarms received from the EST system.

Software requirements

The software requirements for the firepanel system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect EST firepanel interface (`est`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect EST firepanel interface (`est`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- EST panel with available printer port connection, provided by the manufacturer.
- Serial line cable to connect to the Picture Perfect system. This cable should be a standard RS-232 serial cable that would normally work with a serial printer connected to the EST panel.
- Serial Ports

AIX

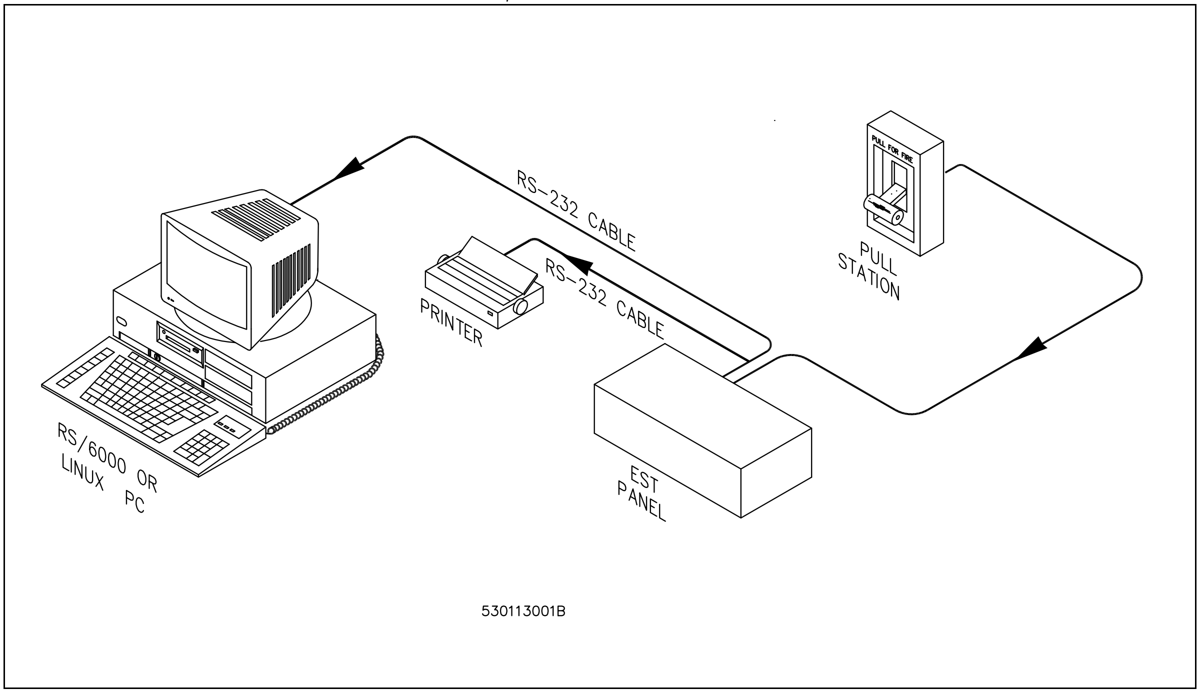
One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the EST communication program is started.

Figure 52. Overview of a stand-alone Picture Perfect and a Firepanel interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- EST panel with available printer port connection, provided by the manufacturer.
- Serial line cable to connect to the splitter master port to the EST system. This cable should be a standard RS-232 serial cable that would normally work with a serial printer connected to the EST panel.
- Serial ports

AIX

-

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the EST communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 53*.

Figure 53. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)

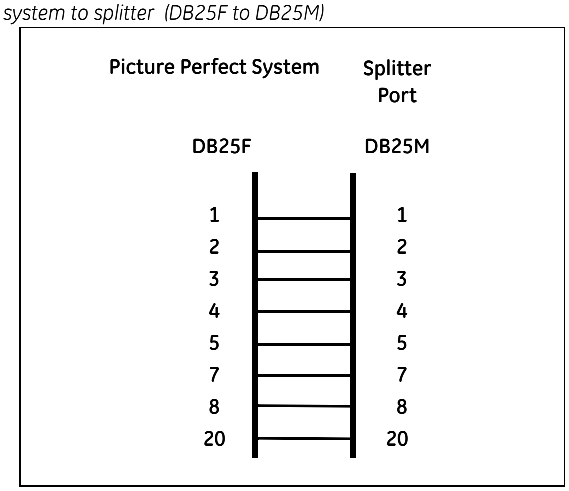


Figure 54. Overview of the cable configuration using a splitter

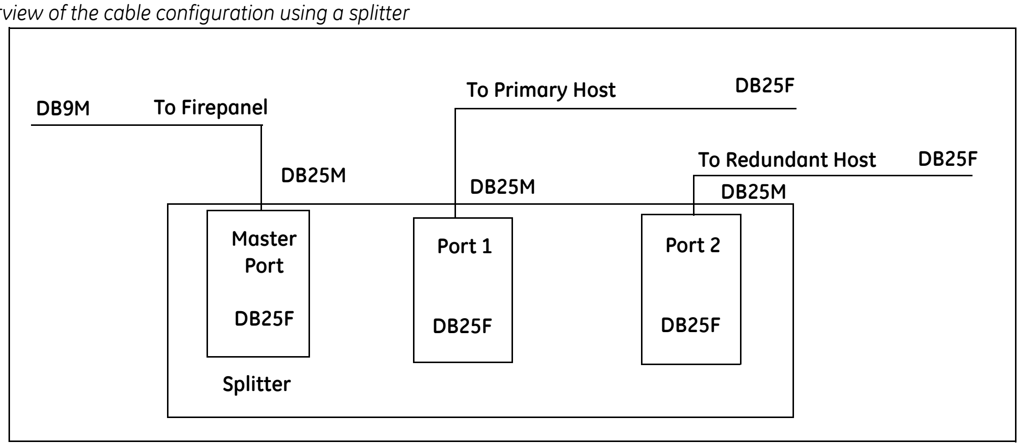
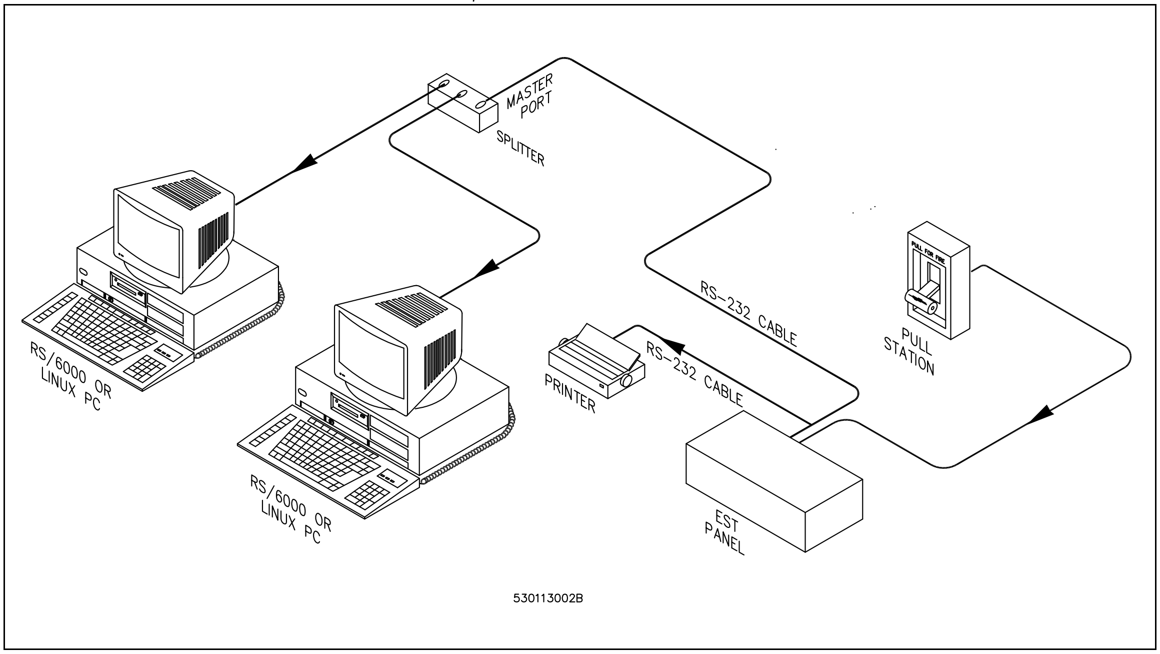


Figure 55. Overview of a redundant Picture Perfect and a Firepanel interface



EST configuration

The EST interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. These messages types and formats used by the EST interface are discussed in the following section. These messages must be configured on the Picture Perfect system.

Note: The `est3gen` application should only be used to configure EST3 systems. Refer to *EST3 configuration* on page 181.

Alarms recognized by the EST interface

The particular alarms that have been predefined into the EST interface are as follows:

~0 – FIRE ALARM

~1 – SUPERVISORY SHORT

~2 – SUPERVISORY OPEN

~4 – RESTORE (Fire Alarm, Supervisory Short or Open)

The ~#, where # is the alarm type, is always located at the beginning of an alarm line that is retrieved from the serial port. When the EST interface finds this pattern, it then searches for the panel/device id by first advancing past the initial alarm line a set number of lines depending on the alarm type. Once that line is found, EST looks for the first colon. After the first colon, there will be a four digit id. This is the panel/device id. EST then searches the input groups category of the Picture Perfect database for the combination of the Input Group Prefix and the panel/device id. See *Input group prefix* on page 175 for more information. If it is found, an alarm is sent to Picture Perfect from the EST interface with an input state that maps to the particular alarm. The different alarm types are recognized by Picture Perfect and the **Alarm Monitor**. The **Alarm Monitor** maps the alarm types in the Condition and Input State fields. The mapping of the Alarm to Condition and Input fields is discussed in *EST alarm mapping to the alarm monitor* on page 180.

The following is a sample message stream as typically seen from a printer:

Alarm Type

Panel/Device ID field

```
~2******************************
11-23-93 07:54:59
SUPERVISORY OPEN: 0206 @07:54 1st Floor Strobe Circuit
|
~1************************************
11-24-1993 09:09:34
SUPERVISORY SHORT: 0301 @09:09 Air Handler 1 "HOA Switch"
|
~0#0000
**************************************
11-24-1993 09:09:39
FIRE ALARM: 0201 @09:09 Main Water Flow Located in Room 012
|
~1************************************
11-24-1993 09:09:46
SUPERVISORY SHORT: 0303 @09:09 Remote Drill Switch
|
~4************************************
11-24-1993 09:09:53
Supervised Short Restored: 0303 @09:09 Remote Drill Switch
```

Using Picture Perfect to configure the EST interface

For a successful configuration, follow these steps:

1. Add or modify input groups
2. Add or modify alarms
3. Add or modify output groups and outputs, if desired
4. Monitor alarms

Adding or modifying input groups

The input group record description field is the key to identifying specific EST panel messages. The format of the input group description is defined such that it can be set up to identify the specific message types coming from the panel for a specific device type.

The panel/device id field, described in the section *Alarms recognized by the EST interface* on page 173, must be entered in the description field. One unique panel/device id per input group record will be required. It is the panel/device field in combination with the Input Group Prefix, discussed in the following section, that the EST interface will look up in the input group along with the associated alarm to determine if the alarm should be sent to Picture Perfect. This combination id must be the first item entered in the description field. Other

information may follow the Input Group Prefix and the panel/device id part of the description. The actual description of the alarm is set up in the Alarm form and tied in to each input group.

Input group prefix

The EST interface uses the concept of an input group prefix to more readily identify the input groups that are defined and to separate the input groups of one instance of the EST interface from another. You must use the following combination of the prefix EST and panel/device id in the beginning of each input group record description.

Combine this with the panel/device ID of the message(s) you wish to recognize. There should be one space between the prefix and panel/device ID. The Panel/Device ID field is described in the section, *Alarms recognized by the EST interface* on page 173.

For example:

If the Panel/Device ID is 0103 and was located in Room 304 of a building and this is an alarm for the EST interface with the prefix EST01 configured, you would enter the Input Group Description as:

```
EST01 0103 Room 304
```

The `EST01 0103` portion is the required part where `Room 304` is the descriptive portion. The Alarm that is linked to this input group could be used to further describe the alarm.

Adding an input group

Follow these steps to add an input group:

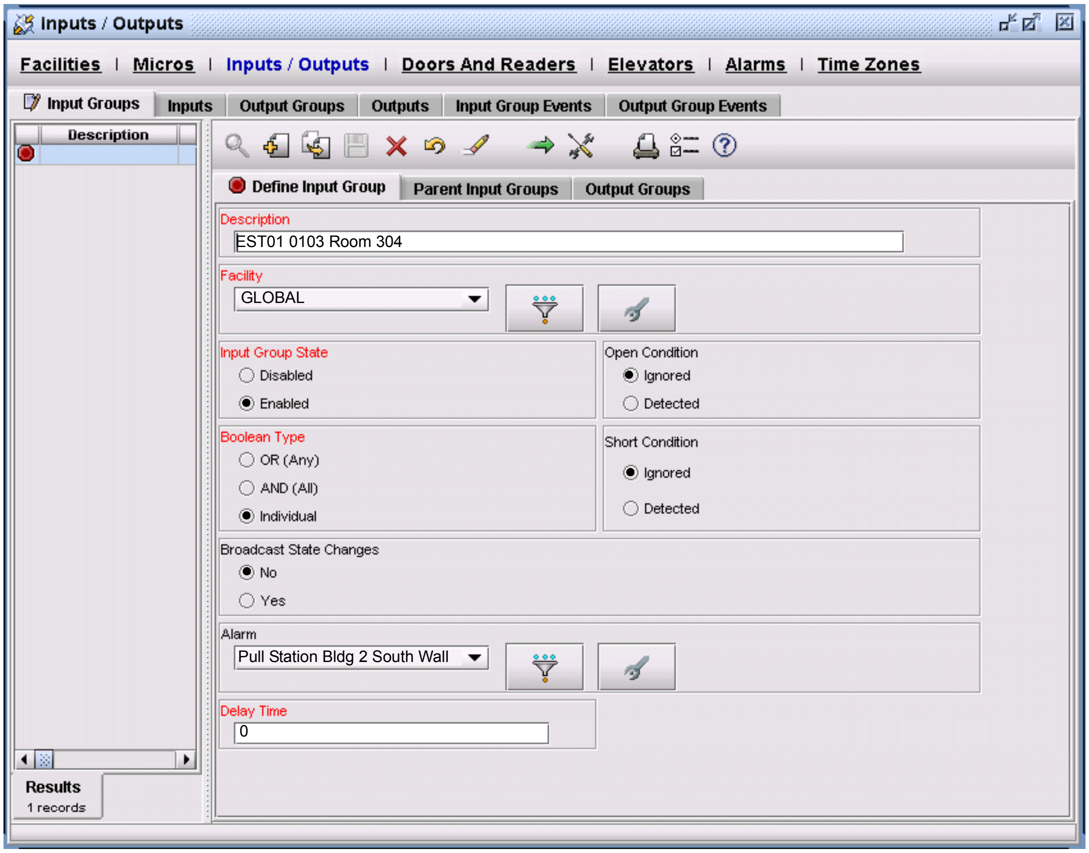
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)

3. Click **Save**.
4. Click **New** to add another input group.

Figure 56. Sample input groups screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

Each EST input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded by alarm history. The linking is done through the Input Group form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the EST interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the Alarm Monitor.

The alarm record description field should be used to further identify or describe the EST input group it is going to be linked to. Several input group records can be linked to the same alarm but it would be prudent to set up one alarm record for each input group record(s) that have the same device and location. The description field has no restrictions or required format since all the unique information for a message type is located in the input group description. If there are similar alarm descriptions that apply to unique devices then separate alarm records and input group records should be created for each unique device to be recognized.

The alarm routing should be set up to according to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select None from the Set Alarm Routing picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

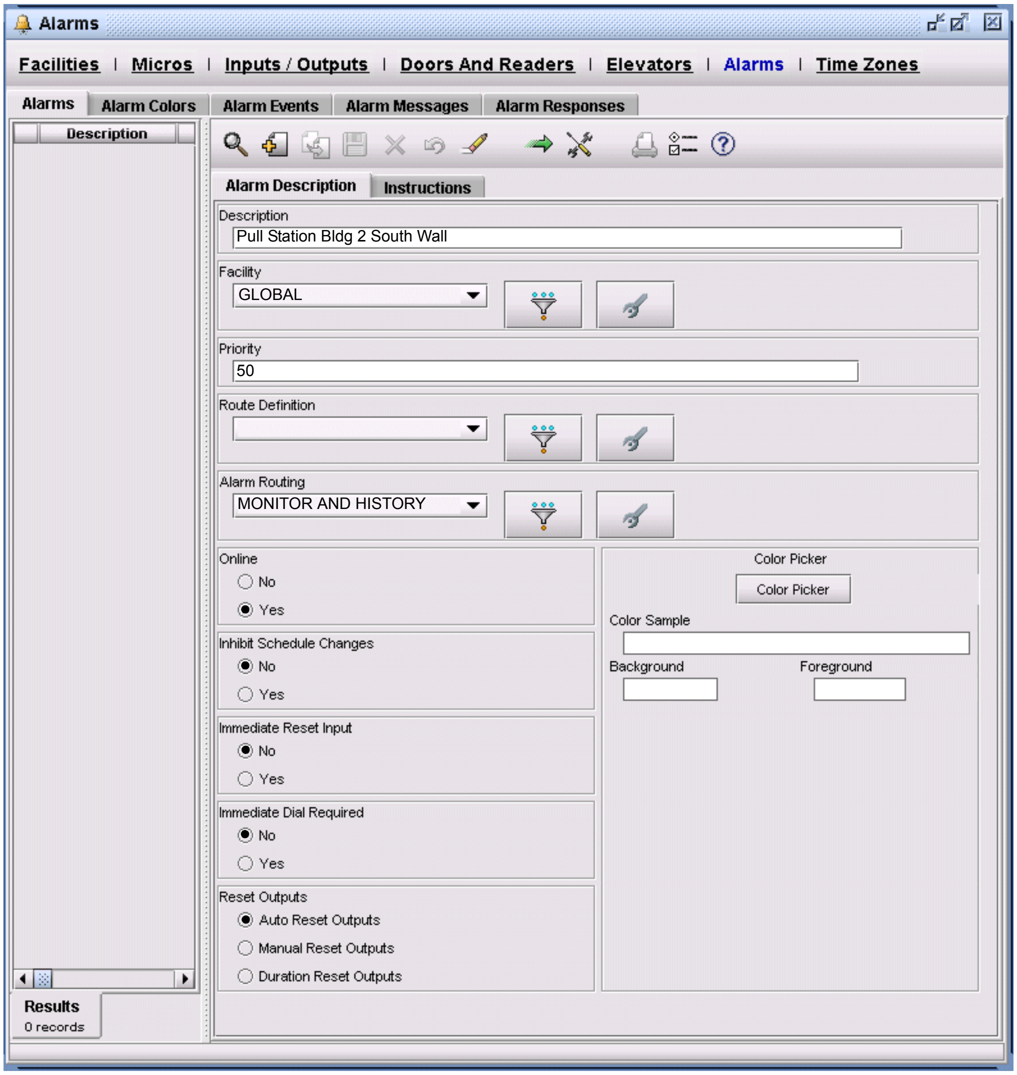
   These fields should be set as follows:

Online	Yes
Reset Outputs	Auto Reset Outputs

   Set the priority, alarm routing, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the “MONITOR” for an alarm to show up on the Alarm Monitor.
3. Click **Save**.
4. Click **New** to add another alarm.

Figure 57. Sample alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, that is, door strikes, lights or sirens, when EST panel messages are received, you will need to configure an output group and a output. The output group must be linked to the input group for the EST message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the Outputs forms may not apply since this is a one way communication between the EST panel and Picture Perfect.

Note: Configuring output groups and outputs is optional.

Monitoring alarms

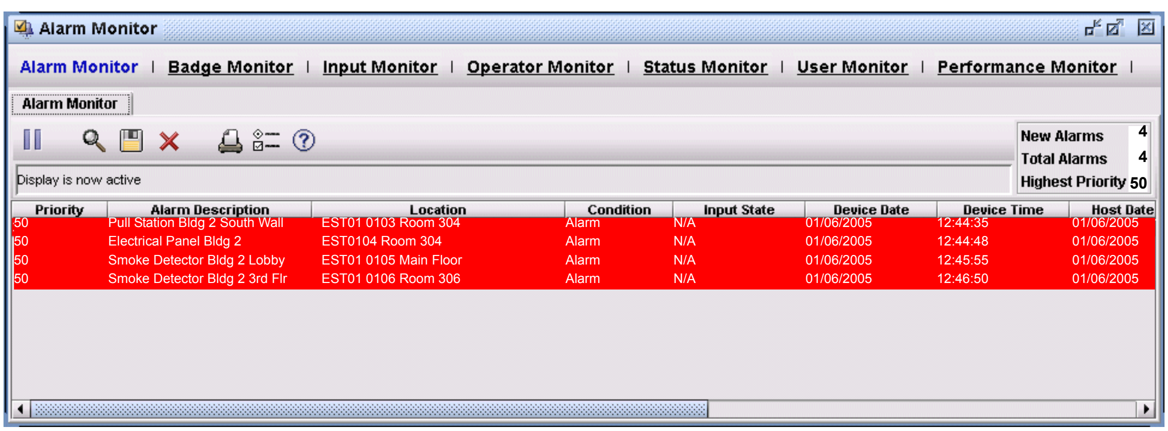
You are now finished with the basic configuration of the EST package. The EST messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell which EST interface instance, the panel/device id, and the type of the reported alarm. If the Alarm Description field was used properly, it should provide more descriptive information about the location of the alarm or panel. The complete message of the alarm should be read from the EST panel or from a printer hooked up to that panel.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the EST panel since this is a one way communication.

All messages recognized by the EST interface will show a condition and input state according to the alarm mapping. See *EST alarm mapping to the alarm monitor* on page 180 for more information on mapping. As with other Picture Perfect alarms that come into the Alarm Monitor the Count column will increment for those alarms that have come in multiple times.

Figure 58. Sample alarm monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system that uses the input group prefix of EST01 and has appropriate input group/alarm records to recognize the conditions coming from the panel. Below is a line by line explanation.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created.

The Location column corresponds to the description field of the appropriate input group record.

Line 1: An alarm condition was detected at a pull station in Building 2.

Line 2: An alarm condition was detected at an electrical panel in Building 2.

Line 3: A smoke detector alarm was observed in the lobby of Building 2.

Line 4: A smoke detector alarm was observed on the third floor of Building 2.

EST alarm mapping to the alarm monitor

Through the defined Condition and Input State fields of Picture Perfect, a mapping was established to identify the different types of EST alarms. The following mapping exists between the EST alarm condition and what will be seen on the Picture Perfect Alarm Monitor.

Table 12. EST Alarm Mapping

	Alarm Monitor Fields	
EST Alarm Type	Condition	Input State
Fire Alarm	Alarm	Open
Supervisory Short	Tamper	Sht/Gnd
Supervisory Open	Tamper	Sht/Gnd
Restore (Fire Alarm, Supervisory Short or Open)	Reset	Closed

EST3 configuration

The EST3 interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. These messages are configured by running the est3gen application.

To run the `est3gen` application:

1. Log in as root.
2. Change to the `/cas/bin` directory by typing the following command:

   `cd /cas/bin` Enter

3. Run the est3gen application by typing:

   `est3gen` Enter

   The following message displays:

   ```
                EST-3 Data Generator  2.0
   Starting the Informix database.. Done

   Would you like to (i)nstall or (u)n-install data records (i/u)? [i] i
   ```

4. Press Enter to install data records.

   The following message displays:

   ```
   You have chosen to install database records.

   Please enter input file name ..............................: /cas/db/text/est3.in
   ```

5. To install the sample database records, enter `/cas/db/text/est3.in`, and then press Enter.

   The following message displays:

   ```
   You entered as the input file name. ........................: /cas/db/text/est3.in
   Is this correct (y/n)? [y]
   ```

6. Press Enter to install the sample database records.

   The following message displays:

   ```
   Enter the input group prefix to be used when creating the records.
   It must be "3" to "4" characters with the last character(s) numeric.

   For example: EST1

   NOTE: This prefix must be the same one that is used by the interface
         that is being targeted.  Refer to the documentation for more
         information about input group prefixes.

   Enter the input group prefix ..............................: EST3
   ```

7. Enter an input group prefix, and then press Enter.

   The following message displays:

```
The input group prefix you entered was ....................: EST3
Is this correct (y/n)? [y]
```

8. Press Enter to accept the selection.

   The following message displays:

```
**--------------------------------------------------------------------------**
**                Default EST3 Facility assignment portion                  **
**--------------------------------------------------------------------------**
When the input_group and alarm records are created, they will require an
associated facility.  You need to select the default facility that will
be used when creating the input_group and alarm records, if an explicit
one is not specified.

The currently available (defined) facilities will be displayed, and you
will need to make a selection from the provided list.  If you need to create
a new facility specifically for the EST3 input_groups and alarms, then
you should exit this program, create the facility using the GUI, then
re-run this program and then choose that facility.

Do you wish to exit this program now (y/n)? [n]
```

9. Type n, and then press Enter to select the facility.

   The following message displays:

```
Acquiring facility list from database.  Please wait...

The following facilities are defined on your system, and available to be
chosen as the default facility:
========================================================================
    1: GLOBAL

Enter the value of the default EST3 facility [1-1] ........: [1]
```

10. Type the number corresponding to the correct facility, and then press Enter.

    The following message displays:

```
You have selected as the default facility .................: GLOBAL
Is this ok (y/n)? [y]

Default Facility chosen is ................................: [GLOBAL]
Default Facility's id is ..................................: [-1]

**--------------------------------------------------------------------------**
**            End of Default EST3 Facility assignment portion               **
**--------------------------------------------------------------------------**

Enter the default alarm priority.  It is the priority that will be used
```

```
for any alarm that has no priority specified.
Value may be in the range 1-500 ...........................: [50]
```

11. Press Enter to accept the default value.

    The following message displays:

```
Selected default alarm priority is ........................: 50
Is this correct (y/n)? [y]
```

12. Press Enter to accept the value.

    The following message displays:

```
Checking input group file data...
Checking alarm file data...
Installing Records...

DBLOAD Load Utility           INFORMIX-SQL Version 11.50.UC3

Table input_group had 18 row(s) loaded into it.

Table alarm had 18 row(s) loaded into it.

Installation complete.
```

13. Your basic EST3 interface is complete.

Advanced configuration

The EST system supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the `/cas/db/text/est_<tty>.cfg` file, where `tty` is the name of the port to which the instance of the EST interface is connected. This file consists of a series of text lines, each containing a variable name followed by a value or setting. The EST interface reads this file upon startup to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change this file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is a sample `est.cfg` file:

```
#
#             est_tty2.cfg 1.23
#
#             Copyright (C) 1994 - 2003 GE Interlogix, Inc.
#                       All Rights Reserved.
#
# This file generated by the following installation script.
#
# est.inst 1.8 05/29/03
#
# This file contains the configuration information for the EST FIRE
# ALARM interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from.
#
# The InpGrpPrefix parameter is a required parameter in the
# configuration file. This parameter is the prefix that must be used
# in the description field for all input groups that are to be
# recognized by the interface. If this parameter is changed here it
# must be changed for all the input groups that are using it as a
# prefix. This prefix is case sensitive so the declaration in here must
# match the one used in the input group description. This description
# must not exceed $max_prefix_lgth characters and the last character or
# characters should be numeric. The input group prefix declared in here # will be read
when the interface is started. If more than one
# interface is installed then the input group prefix must be unique in
# each configuration file.
# An example prefix would be 'EST01' and the next interface that is
# installed could be 'EST02'
# All information is divided into two sections, configuration item
# label, and the desired setting.
# NOTE--THE StdAlarmLF and FireAlarmLF VALUES MAY HAVE TO BE CHANGED.
# Upon installation, the StdAlarmLF and FireAlarmLF are configured
# as 4 and 6 respectively. On some EST devices, it has been noted that
# an extra LF is generated for each line, so the values actually would
# need to be changed to
#             StdAlarmLF          8
#             FireAlarmLF         12
# To determine what the actual value is, if inputs from the EST device
# which have been configured with an associated PP Alarm/Input_Group
```

```
# pair are not being annunciated on the Alarm Monitor, then diagnostics
# should be turned on on the PP host, and the smx.MMDD log file checked
# to see what is being expected versus the actual reality of what is
# being transmitted from the EST. If it should be 8 and 12, then this
# configuration file should be updated, and the interface re-started to
# enable it to read and use the new values.
#
#
# The following values are unique to the EST interface.
# Do not change unless instructed by GE Interlogix - CASI
#
StdAlarmLF                      4
FireAlarmLF                     6
Icanon                          y

#
# The following values are set up based on your
# installation responses.
#
InpGrpPrefix  EST01

PortName                        /dev/tty2
PortBaud                        1200
CharacterSize                   8
Parity                          e
StopBits                        1
Xon                             n
Xoff                            n
```

Appendix G Configuring a Firesine interface

This appendix provides information on configuring the Firesine interface to Picture Perfect which acts as a secondary monitoring system for the firepanel and recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The Firesine interface to Picture Perfect acts as a secondary monitoring system for the firepanel and recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

Communication from the firepanel to the Picture Perfect host is using a serial line connection. The communication is unidirectional, meaning the interface only receives data from the firepanel and does not send anything back.

The Picture Perfect Alarm Monitor may be used to monitor messages from the firepanel. The Firesine interface acts as a filter that recognizes predefined alarm conditions coming in over the serial line. When an alarm condition has been detected, the Firesine interface picks up a Start of Text (STX-Hex02) character over the serial connection. The character following the STX character, an F, A, or D, determines the alarm or message type. This is followed by a 6-digit code, that along with the alarm type (creating a 7-character alphanumeric id), is combined with the input group prefix for the interface, to create a unique string that is looked up in the Picture Perfect input group table. This unique prefix and 7-character id must have been previously set up through the Input Group form in Picture Perfect, along with an associated alarm from the Alarm form. If there is a match, meaning that the prefix and 7-character id was found, along with an alarm, an alarm message is sent to be processed by Picture Perfect, and displayed on the Picture Perfect Alarm Monitor. The Picture Perfect Alarm Monitor will display the Input Group Prefix, the 7-character id, and a user defined alarm description. Further message information should be obtained from the primary monitoring device, which is the Firesine panel.

Optionally, an output group and associated outputs can be associated with an input group.

Messages or alarms recognized by the firepanel interface are looked up in the Picture Perfect database using the input group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group.

Redundant systems

The Firesine interface to Picture Perfect also supports operations in a Picture Perfect Redundant System (`pprs`) environment where two hosts connect to a single Firesine system. Connectivity is achieved using a splitter between the Picture Perfect system and the Firesine system. This allows the physical connection of the Firesine system to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Firesine system interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host processes the alarm and forwards it to the Alarm Monitor. Normal pprs processing will result in the alarm appearing on the backup host's Alarm Monitor. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then process the alarms received from the Firesine system.

Software requirements

The software requirements for the Firesine system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Firesine interface (`firesine`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect Firesine interface (`firesine`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Firesine 4100 panel
- A three-wire, full-duplex serial data link that operates at 1200 baud, 8 data bits, even parity, and one stop bit.
- Serial ports

AIX

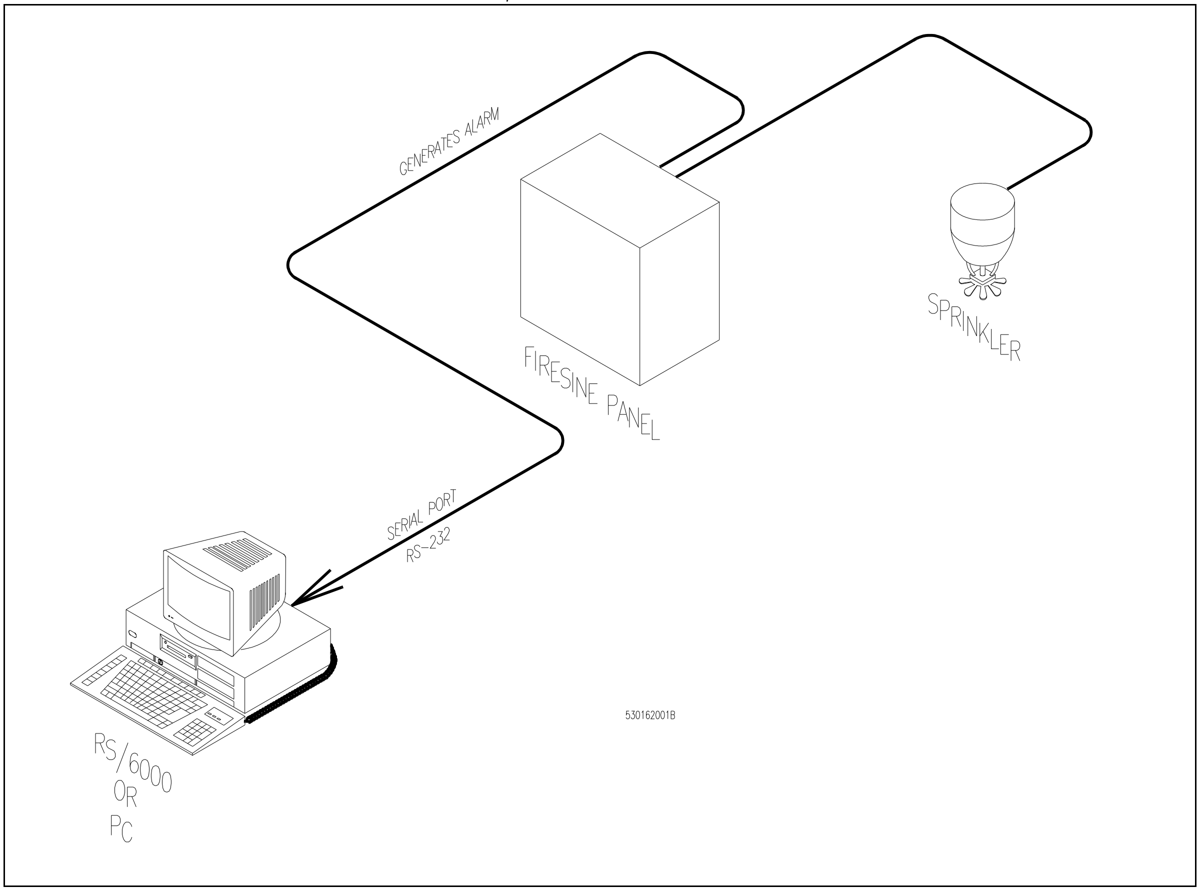
One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Firesine communication program is started.

Figure 59. Overview of a stand-alone Picture Perfect and a Firepanel interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Firesine 4100 panel
- A three-wire, full-duplex serial data link that operates at 1200 baud, 8 data bits, even parity, and one stop bit.
- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Firesine communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 60*.

Figure 60. Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)

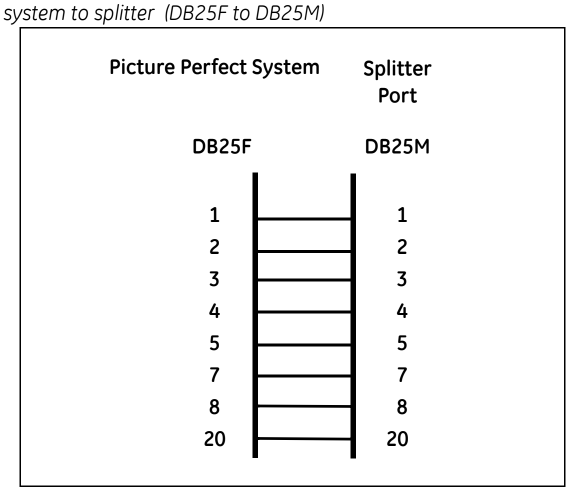


Figure 61. Overview of the cable configuration using a splitter

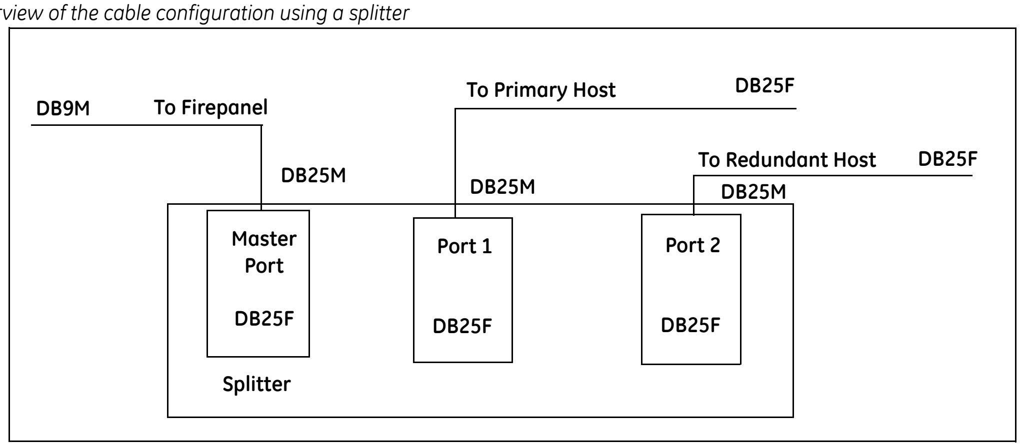
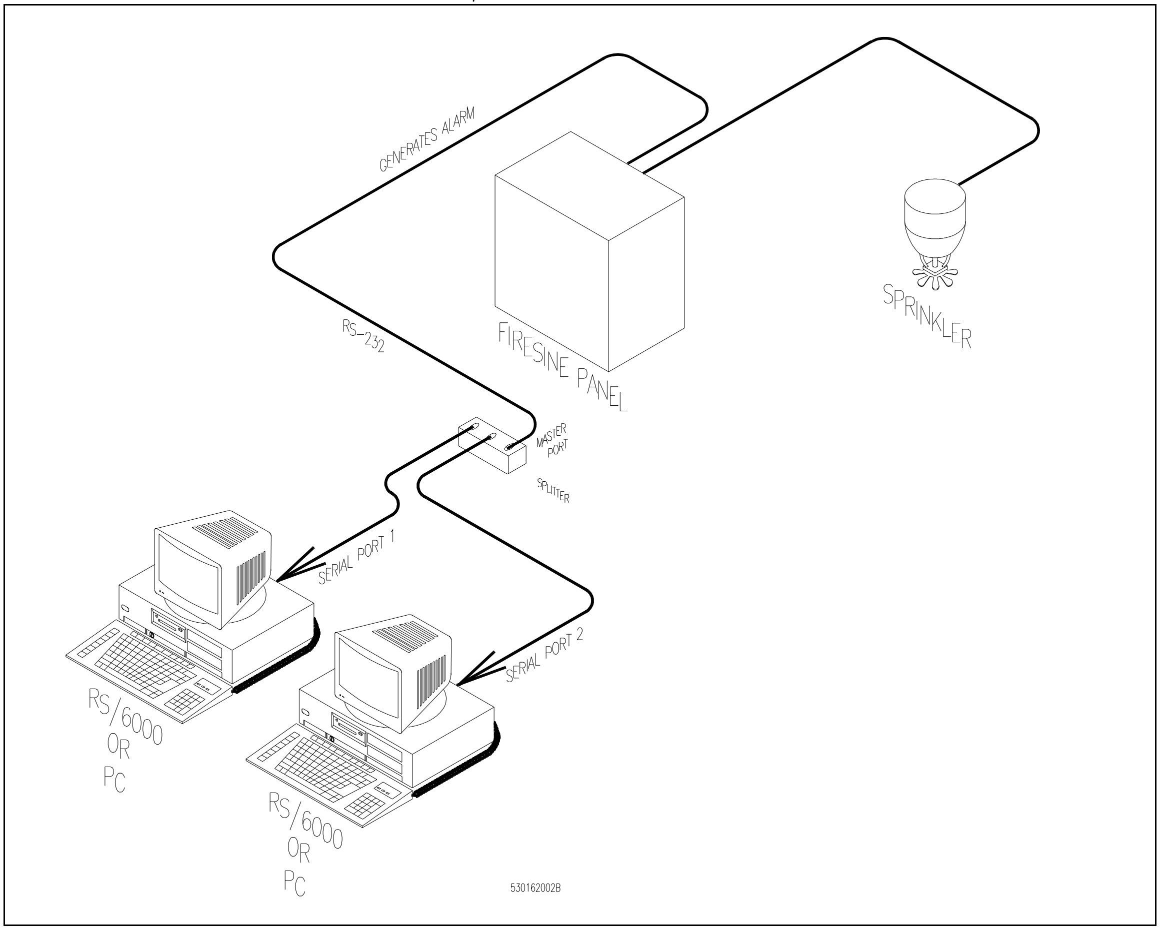


Figure 62. Overview of a redundant Picture Perfect and a Firepanel Interface



Configuration

Picture Perfect acts as a secondary monitoring system for the Firesine fire and other life-safety alarms. The Firesine Interface for Picture Perfect processes Alert, Fault, Fire and System Reset messages from the Firesine panel. All other Firesine messages such as General Fault, Time and Date, Zonal Output Control, will be ignored. In addition, it should be noted that because the communications link between Picture Perfect and the Firesine panel is uni-directional, the Picture Perfect system cannot determine if there is a communications break in the line. Therefore, no alarm is reported in this situation.

Prior to defining alarms and input groups on the Picture Perfect system, the Firesine system must be already configured. Alarm points must have a three-digit identifier as part of their description on the Firesine system.

Firesine message structure

The Firesine messages are delimited by STX (hex 02) and ETX (hex 03) and have the following format:

```
<STX>A123textStringMessage<ETX>
```

or

```
<STX>A123456textStringMessage<ETX>
```

where:

- `A` is one of the following type of commands:
  ```
  A=Alert (pre-alarm)
  D=Fault
  F=Fire
  G=General Fault
  R=System Reset
  T=Time and Date
  Z=Zonal output control
  ```
- `123`=3 digit ID (null for R=System Reset)

  or

  `12345`=6 digit ID (null for R=System Reset)
- `textStringMessage`=maximum 24 character text string (ignored).

Any other type of command is ignored by the interface.

An example of an incoming Firesine message stream (separated by lines for clarity):

Type of Alarm message (1 character "F")

6 digit ID (001101)

```
(STX)F001101Fire Message string(ETX)
(STX)TTue Feb 11 15:37:59 EST 2003(ETX)
(STX)A001101Alert Message(ETX)
```

Picture perfect input group description

The Picture Perfect input group description is constructed by concatenating a prefix string (default: `FIRESINE`), a blank space, the 1 character command type (`F`, `A`, or `D`), and the 3 or 6 digit id. A text string is used for the System Reset (default: `FIRESINE_RESET`), instead of the 3 or 6 digit id.

The `/cas/db/text/firesine.cfg` file contains the length of the numeric id in the `AlarmIdLen` variable. The default is 3.

The `/cas/db/text/firesine.cfg` file also contains the prefix string and the reset message string definitions in the respective `InGrpPrefix` and `ResetMsg` variables.

These may be changed but must match the description in the input group description. These strings must contain no blanks. If the strings are to be changed, it is strongly suggested that they be changed before the first input group records are created, because if they are changed afterwards, all of the already created records will need to have their description altered.

Sample input group descriptions would be:

`FIRESINE F123`Input group description for a 3-digit id

`FIRESINE F123456`Input group description for a 6-digit id

`FIRESINE FIRESINE_RESET`The reset message input group description

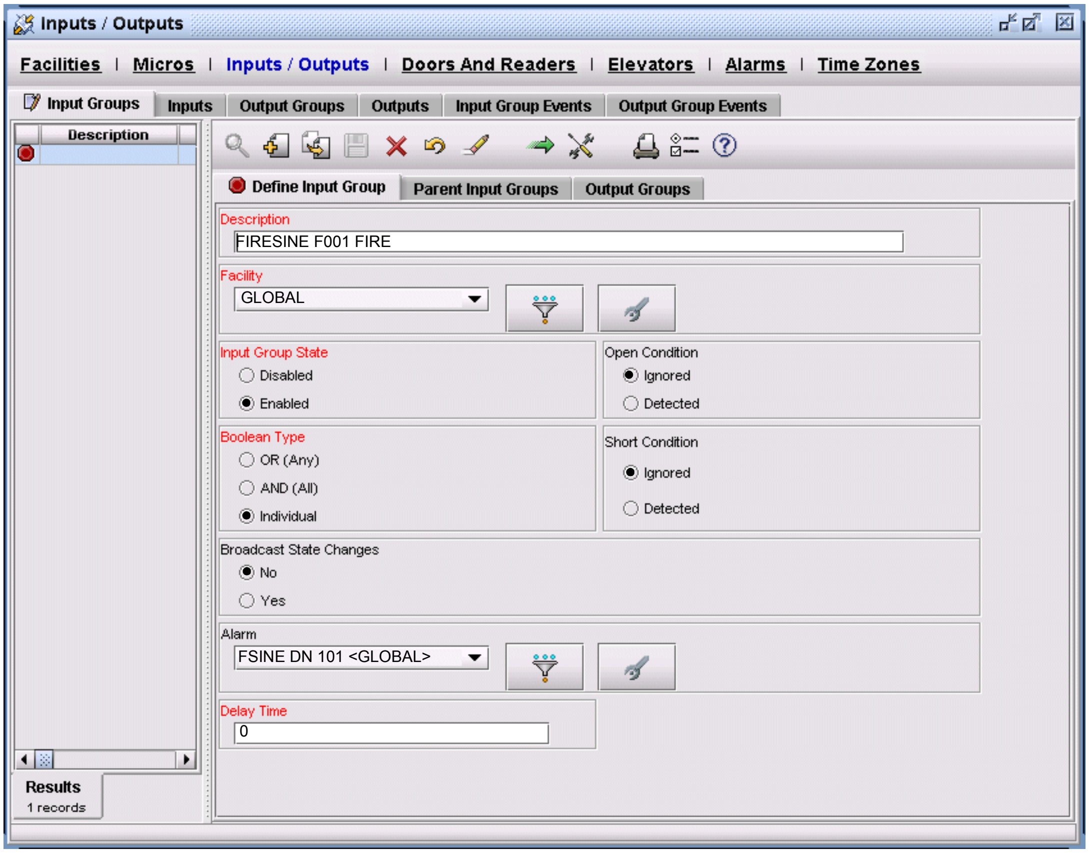
Adding or modifying an input group

Each Firesine alarm must have an individual input group assigned which includes the command type and a three-digit or six-digit identifier. The description field in the **Input Group** screen, which allows for 60 alphanumeric characters as shown in *Figure 63*, must be such that it is meaningful and must match the three-digit or six-digit identifier number as part of its description.

Follow these steps to add an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.
3. Click **Save**.
4. Click **New** to add another input group.

Figure 63. The input group screen



Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. In the **Description** field of the **Input Groups** form, enter `FIRESINE%` as the search criteria.
3. Click **Find**.

   All of the configured Firesine input groups will be loaded.
4. Locate the desired input group on the grid.
5. Edit the desired information.
6. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

If you want to see a unique Picture Perfect alarm displayed for each Firesine alarm, define a separate alarm for each Firesine alarm and assign it to a corresponding input group.

You must define an alarm and input group for every point that is detected by the Firesine system. When alarms and resets are received, they are transmitted to the Picture Perfect system for processing. Each alarm will be routed to the **Alarm Monitor** and History.

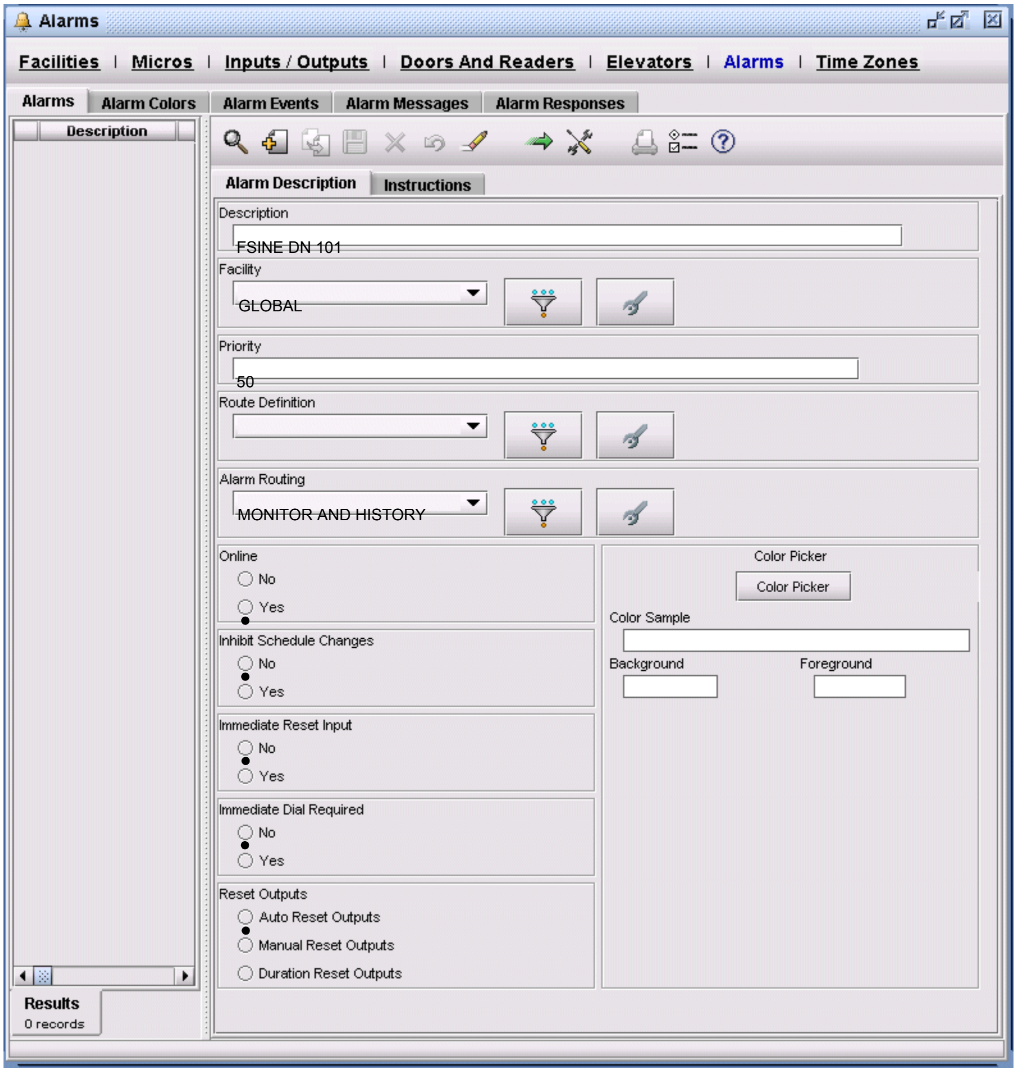
Alarms are handled as logical alarms so they can be responded to and removed without being physically reset.

The description field of the Alarms screen simply displays to the Picture Perfect system that a Firesine alarm has been triggered and identifies the priority of the alarm. The description can be anything that is meaningful.

Follow these steps to add a Firesine alarm:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form. Make sure that:
    - **Alarm Routing** is set for at least **Monitor** but preferably **Monitor AND History**.
    - **Online, Inhibit Schedule Changes**, and **Immediate Reset Input** is set to **Yes**.
    - **Reset Outputs** is set to **Auto Reset Outputs** so the alarm can be removed from the Picture Perfect **Alarm Monitor** without being reset.
3. Click **Save**.
4. Click **New** to add another alarm.

Figure 64. The alarms screen



Follow these steps to modify the alarm:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the description field of the **Alarms** form, enter the description from the alarm text area on the associated input group record as the search criteria.
3. Click **Find**.

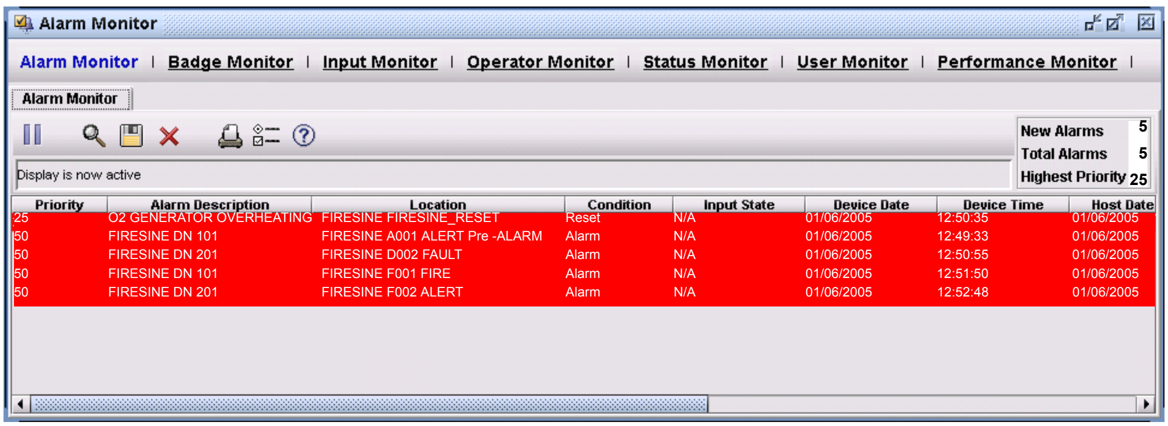
   The desired alarm should appear.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Monitoring alarms

The Alarm Monitor screen displays incoming alarms and their priority, count and status. Alarms display on the Alarm Monitor in order of their priority. When an alarm occurs, the system beeps and displays a pop-up window to notify the operator.

Click on the Monitor/Alarm Monitor icon to bring up Picture Perfect Alarm Monitor screen. *Figure 65* shows a sample list of alarms, their location, and the date and time of occurrence.

Figure 65. The alarm monitor screen



Refer to the *Picture Perfect User Manual* for more information on monitoring and responding to alarms.

Advanced configuration

The Firesine system supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the `/cas/db/text/firesine.cfg` file. This file consists of a series of text lines, each containing a variable name followed by a value or setting. The Firesine interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change this file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is a sample `firesine.cfg` file:

```
#
#             firesine.cfg
#
#             Copyright (C) 1994 - 2003 GE Interlogix, Inc.
#             All Rights Reserved.
#
# This file generated by the following installation script.
#
# @(#)firesine.inst 1.5 05/29/03
#
# This file contains the configuration information for the Firesine
# FIRE ALARM interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from.
#
# All information is divided into two sections, configuration item
# label, and the desired setting.
#
# The following values are unique to the Firesine interface,
# do not change unless instructed by GE Interlogix - CASI
#

#
# The ResetMsg must be established within an input group description.
# It must contain this exact character string if the interface is going
# to recognize Firesine System Reset messages. If changed it must not
# contain any spaces, and it must be within the description of the
# input group.

ResetMsg      FIRESINE_RESET

#
# The InpGrpPrefix parameter used as a required prefix to the alarm id.
# This makes a unique input group description for Firesine alarms.
# If this is changed here it must be changed in the input description
# as well and they are case sensitive! This configuration parameter
# must not contain spaces. In the input group description there should
# be one space between this prefix and the alarm id. FIRESINE F101 or
# FIRESINE F001101 for example.
#

InpGrpPrefix  FIRESINE

#
# The Alarm IdLen parameter is used to determine the length of the
# Firesine alarm id. The original requirement was 6 but it is now 3.
```

```
# The Id is used as part of the input group description.
#
AlarmIdLen    3

Icanon        2
#
# The following values are setup based on your installation responses.
#
PortName                          /dev/tty2
PortBaud                          9600
CharacterSize                     8
Parity                            n
StopBits                          1
Xon                               y
Xoff                              y
```

Appendix H Configuring a Notifier interface

This appendix provides information on configuring the Notifier interface to Picture Perfect which acts as a secondary monitoring system for the Notifier Interface Panel (AM2020, AFP1010, or AFP-400) and recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The Notifier interface to Picture Perfect acts as a secondary monitoring system for the Notifier Interface Panel (AM2020, AFP1010, or AFP-400) and recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

The Picture Perfect Alarm Monitor may be used to monitor messages from the Notifier panel. For detector and module monitoring, the information displayed in the Alarm Monitor will show the device type, status, loop and detector/module number and a user defined description field. Further message information should be obtained from the primary monitoring device which is the Notifier panel and its associated printer.

The interface can monitor system type messages coming from the firepanel which do not have an associated device type. A list of the fixed message types the interface can monitor can be found in *Fixed messages types* on page 214.

Communication from the Notifier Fire Alarm System to the Picture Perfect host is using a serial line connection. The communication is unidirectional, meaning the interface only receives data from the Notifier panel and does not send anything back. The serial line utilized by this interface will be through the Notifier AFP1010/AM2020 Panel printer connection on the appropriate serial interface board (SIB), or the TB1 printer connection on the Notifier AFP-400 panel's CPU-400 control panel.

Messages or alarms recognized by the Notifier interface are looked up in the Picture Perfect database using the input group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group.

Redundant systems

The Notifier Fire Alarm System interface to Picture Perfect also supports operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single fire alarm system. Connectivity is achieved using a splitter between the Picture Perfect system and the fire alarm system. This allows the physical connection of the fire alarm system to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Notifier fire alarm system interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host processes the alarm and forwards it to the Alarm Monitor. Normal pprs processing will result in the alarm appearing on the backup host's Alarm Monitor. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then process the alarms received from the Notifier fire alarm system.

Software requirements

The software requirements for the firepanel system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Notifier interface (`notifier`) package:

  For the Notifier AFP1010/AM2020 System:
  - The panel must be configured with the pager option enabled. This option is available on Notifier systems equipped with revision 6.5 or later EPROMs. See the AM2020/AFP1010 manual for instructions on enabling this option.
  - The panel must be configured with the Auxiliary Printer Monitoring option disabled. See the AM2020/AFP1010 manual for instructions on disabling this option.

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Redundant System (`pprs`) package
- Picture Perfect Notifier interface (`notifier`) package:

  For the Notifier AFP1010/AM2020 System:
  - The panel must be configured with the pager option enabled. This option is available on Notifier systems equipped with revision 6.5 or later EPROMs. See the AM2020/AFP1010 manual for instructions on enabling this option.
  - The panel must be configured with the Auxiliary Printer Monitoring option disabled. See the AM2020/AFP1010 manual for instructions on disabling this option.

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

For the Picture Perfect system:

- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Notifier communication program is started.

For the Notifier AFP1010 or AM2020 system:

- Notifier Interface Panel AFP1010 or AM2020 equipped with revision 6.5 or later EPROMs.
- Serial Line Cable to connect from the Picture Perfect system’s serial port to the appropriate SIB board on the Notifier panel.
  The Notifier Interface uses the printer connections on the appropriate SIB-232, SIB-2048, or SIB-NET boards on the Notifier panel. The cable should be wired to use the P3 connector pins 1-4, on the appropriate SIB board. Figure 5.5 of *Chapter 1 - Installation* of the AM2020/AFP1010 manual, Revision C, describes the exact wiring that must be used for this interface.

For the Notifier AFP400 system:

- Notifier AFP400 Intelligent Fire Detection and Alarm System panel.
- Custom cable to connect from the Picture Perfect system EIA-232 port to the AFP-400 TB1 printer port. The required pin connections for this cable are shown in the AFP-400 Analog Fire Panel Installation Manual, Chapter 2 Installation, in the Section, Remote Printers and CRTs, Subsection Connecting a PRN-4 Remote Printer (Document 50253, 01/05/96, Rev:A, P/N50253:A1, ECN 96-002). The pinouts description and figure describes the wiring that must be done, except the 25-pin printer port will be replaced with the Picture Perfect system’s EIA-232 port on the adapter.

Figure 66. Cable pinouts: Picture Perfect system to AFP-400 System (25 pin to TB1)

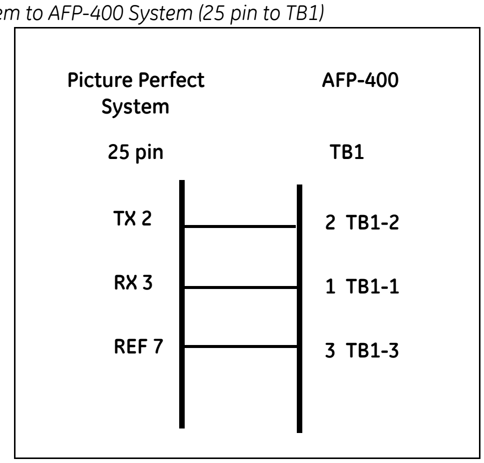
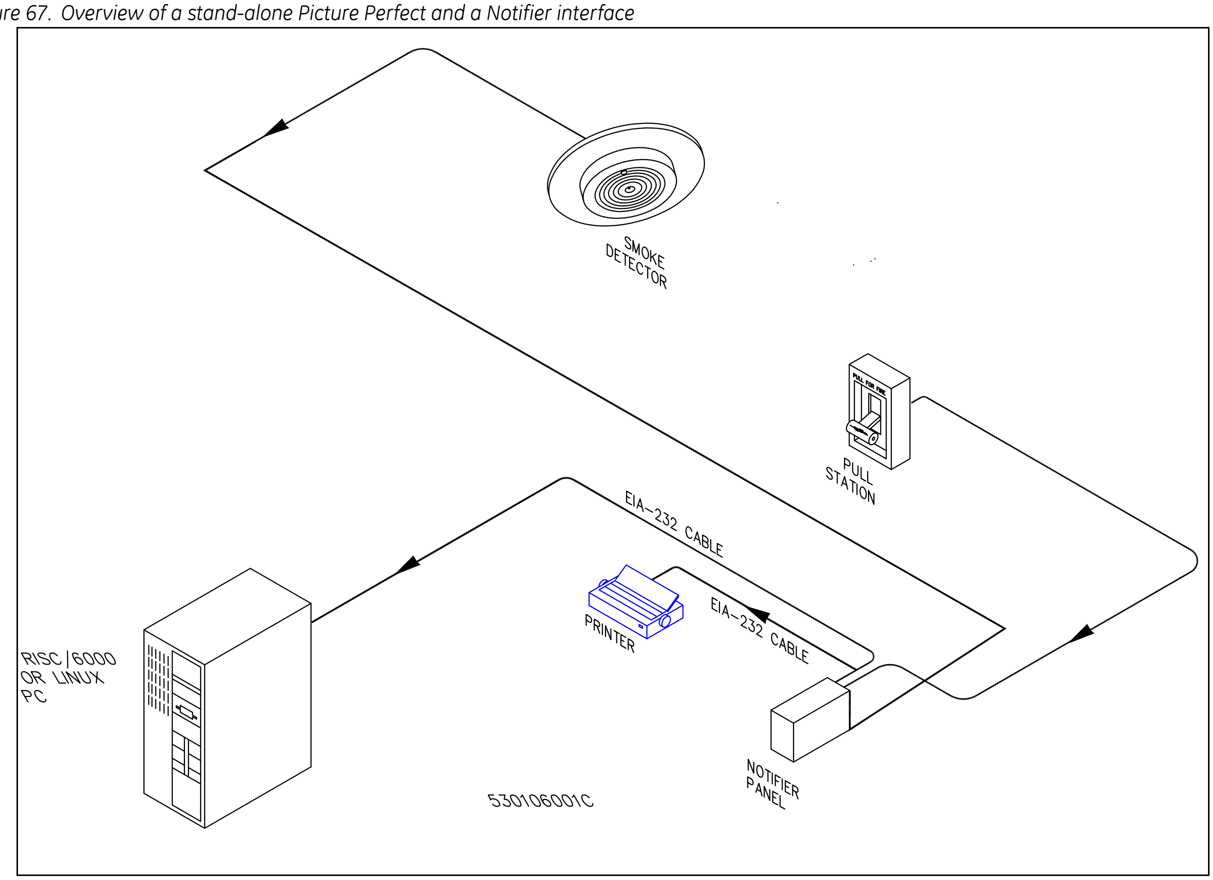


Figure 67. Overview of a stand-alone Picture Perfect and a Notifier interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

For the Picture Perfect system:

- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

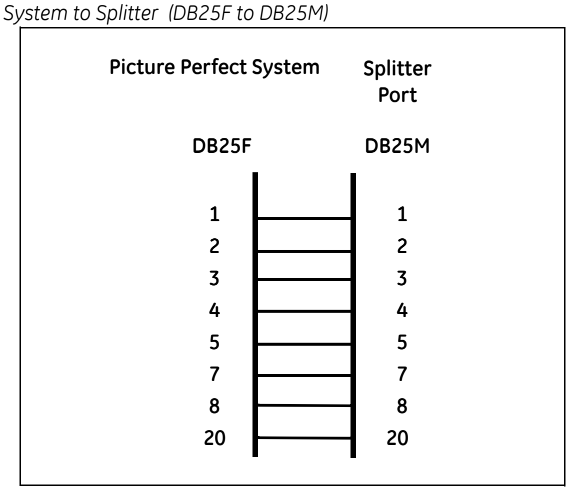
One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Notifier communication program is started.

For each Notifier interface panel

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 68*.

Figure 68. Cable Pinouts: Picture Perfect System to Splitter (DB25F to DB25M)



- Cable to connect the splitter master port to the Notifier port.

For the Notifier AFP1010 or AM2020 system:

- Notifier Interface Panel AFP1010 or AM2020 equipped with revision 6.5 or later EPROMs
- The Notifier Interface uses the printer connections on the appropriate SIB-232, SIB-2048, or SIB-NET boards on the Notifier panel. The cable should be wired to use the P3 connector, pins 1-4, on the appropriate SIB board to connect to the 25-pin master splitter port. Figure 5.5 of Chapter 1 - Installation of the AM2020/AFP1010 Manual Revision C, describes the exact wiring that must be used for this interface.

For the Notifier AFP400 system:

- Notifier AFP400 Intelligent Fire Detection and Alarm System panel.
- Custom cable to connect from the EIA-232 master splitter port to the AFP-400 TB1 printer port. The required pin connections for this cable are shown in the AFP-400 Analog Fire Panel Installation Manual, Chapter 2 Installation, in the section, Remote Printers and CRTs, subsection Connecting a PRN-4 Remote Printer (Document 50253, 01/05/96, Rev:A, P/N50253:A1, ECN 96-002). The pin-out description and figure describes the wiring that must be done, except the 25-pin printer port will be replaced with the 25-pin master splitter port. Refer to *Figure 69*.

Figure 69. Cable pinouts: Picture Perfect system to AFP-400 (25 pin to TB1)

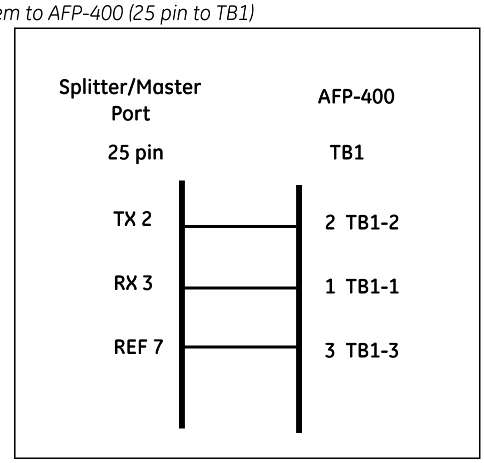


Figure 70. Overview of the cable configuration using a splitter

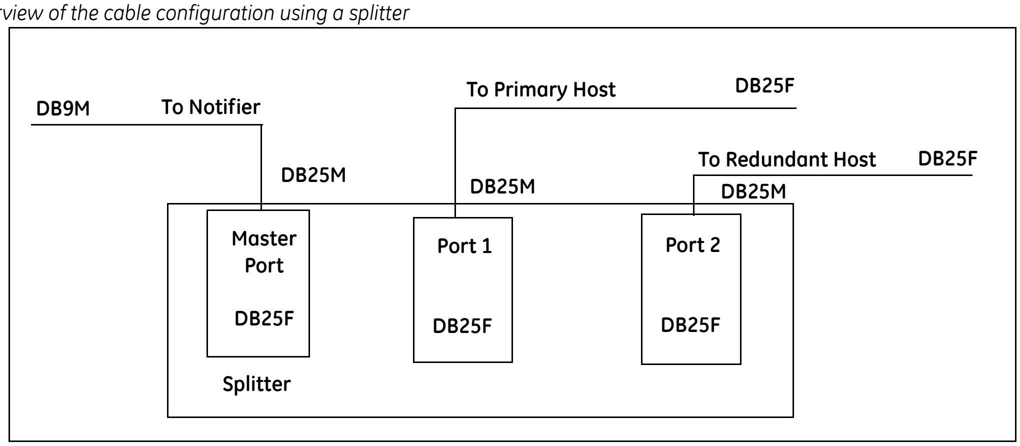
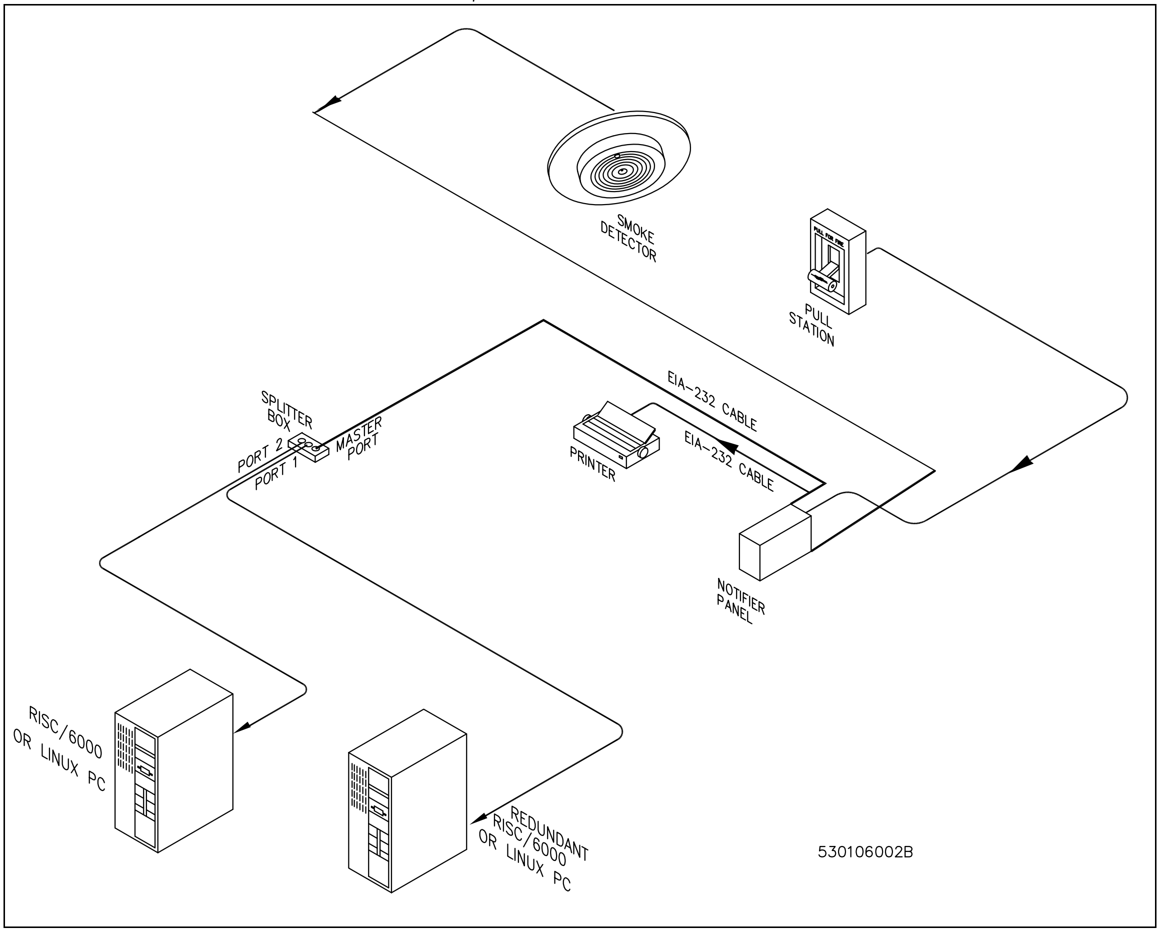


Figure 71. Overview of a redundant Picture Perfect and a Firepanel interface



Configuration

The Notifier interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. The message types and formats used by the Notifier AFP1010/AM2020 interface were derived from the "EIA-232D Protocol and Data Formats for the AM2020 Fire Alarm Control Panel" document, revision 7. These messages must be configured on the Picture Perfect system.

There are two methods available to configure these messages:

1. Automatically using the Notifier Fire Alarm data generator tool, `nfrgen`.
2. Manually using Picture Perfect.

If you plan to enter many messages at once, we strongly recommend you use the `nfrgen` command line tool. Using `nfrgen` exclusively to create or modify data records will enable you to keep track of the specific messages that are being monitored for a particular panel on a specific port. This tool is explained in detail in the following section. However, if you choose to use Picture Perfect to insert the database records, this procedure is explained starting on page .224 with the section entitled *Using Picture Perfect to configure the Notifier interface*.

Using nfrgen

The Notifier Fire Alarm data generator tool, `nfrgen` is a command line tool that installs or un-installs database records that are associated with the Notifier fire alarm interface. This tool is part of the Notifier Fire Alarm Interface package for Picture Perfect and is installed with the package. The `nfrgen` tool will create the temporary files that it needs in the `/tmp` directory as it processes an input file and later generates the associated database records.

The install portion of this tool is explained in the next section.
See *nfrgen – uninstall* on page 222 for an explanation of the uninstall portion.

Note: If the Notifier interface is running in a Redundant Picture Perfect environment, nfrgen must be run on the current primary machine only. The normal operation of the redundant Picture Perfect system will sweep the database updates made by nfrgen on the primary machine over to the backup machine.

nfrgen – install

The install portion of the tool generates input group and alarm database records. Before running the install program, you will need to:

- Create an input file.
- Know the input group prefix.
- Decide whether you would like the fixed message types installed.
- Create a list of the points that are going to be monitored which includes the device type, loop/detector, loop module or zone number. This kind of report can be obtained from the Notifier panel.

Creating an input file

The input file describes the types of messages and devices to be monitored by the Notifier fire alarm interface. It is a text editable file that must be created prior to running the `nfrgen` tool.

Before creating an input file you will need to know:

- The version of Picture Perfect you are running. This is very important since the layout of the database records may differ depending on the version of Picture Perfect that is running.
- The message type you wish to monitor for a device type. The message types that can be monitored are discussed in later sections.
- For each device to be monitored, the device type and one of the following depending on the message type: loop/detector, loop/module, zone number or annunciator number. A report containing the installed devices can be obtained from the Notifier Panel through the point report function. Please see your appropriate AFP1010, AM2020, or AFR400 operation manual.
- A brief description that gives more detail about the device. This information will be used as the alarm description field for an alarm record.

The last three bullets comprise the data format portion of the input file. With this information the `nfrgen` tool will generate and load the database with the appropriate input group and alarm database records.

Picture Perfect version

The first line of the input file must contain the Picture Perfect version that is running. The version number is used by the `nfrgen` tool to determine the database input. The current versions that are supported by the `nfrgen` tool are:

1.7 (RISC/AIX 4.3.3 and Linux 7.2)

2.0 (RISC/AIX 5.1 and Linux 7.3)

4.0 (RISC/AIX 5L Version 5.2 or Red Hat Linux WS, ES, or AS 4.0)

4.5 (RISC/AIX 6.1 or Red Hat Linux 5.3)

Message types

The lines of data that follow the Picture Perfect version number should contain rows of delimited text data that describe the message type, device type, location and brief description. The delimiter character must be the "|" symbol. There should be one line of data for each message, device type, loop/detector, loop/module or zone number that is going to be monitored.

The following message types can be configured for monitoring: Alarm Message, Trouble Message, Zone Disable Message, Annunciator Trouble Message, Walk Test Message, Module Activation Message, Supervisory Activation Message.

Each of the above message types require four columns of data except for Annunciator Trouble messages which only require three.

```
Column Descriptions for All Message Types Except Annunciator Trouble:

Column 1        Column 2        Column 3        Column 4        Column 5        Column 6

MSG TYPE        DEV TYPE        LDD or ZXXX     ALARM           FACILITY        ALARM
                                or FFF          DESCRIPTION                     PRIORITY
```

MSG TYPE

This column is a one character abbreviation of the message type to be monitored. The following list defines the message type abbreviations and the possible status information that the message type can produce.

Abbreviation	Message Type	Status
A	Alarm Message	`ALARM:, ACK AL, CLR AL, ACL AL`
T	Trouble Message	`TROUBL, ACK TB, CLR TB, ACL TB`
Z	Zone Disable Message	`TROUBL, ACK TB, CLR TB, ACL TB`
W	Walk Test Message	`UNPROG, UNINST, TESTXX, UNTEST`
M	Module Activation Message	`ACTIVE, CLEAR`
S	Supervisory Activation Message	`ACTIVE, CLR ACT`

The status information that can be produced for each message type will be used as part of the input group record description. For each message type to be monitored there will be `X` number of input group records generated for that message type where `X` is the number of statuses available for that message type. The message status is used in combination with the `DEV TYPE` and `LDD` or `ZXXX` or `FFF` described below to create unique input group records.

DEV TYPE

The device type column is the actual device type to be monitored. The valid device types that can be monitored are listed in *Device types* on page 236. The spelling and spacing of the device type must be exactly the same as is listed in this document since this is part of the actual message that the Notifier panel produces. This column must be in uppercase and no more than 12 characters in length.

LDD or ZXXX or FFF

The third column is used for the `LDD` or `ZXXX` or `FFF` number which describes the loop/detector, loop/module or zone number of the device type in the case of Zone Disable messages. The LDD/FFF format should be used in this column unless it is a Zone Disable, used for the Notifier AM2020, AFP1010, message type. The `LDD` format is a three digit combination of the loop number and detector or module number where `L` equates to the loop number (1-9,0=10) and `DD` equates to the detector or module number (01-99). Leading zeroes are significant in this column and should be used. For example, if you have a device on loop “2”detector number “9” then the `LDD` number would be “209”. The `FFF` format, used for the Notifier 400, is a three digit number that may include decimal points.

The format for Zone Disable is `ZXXX` where `Z` is fixed character and `XXX` is the zone number making this a four character field for these message types. The zone number is only applicable for Zone Disable message types. The `nfrgen` tool will specifically check for the uppercase `Z` character and that the column is a total of four characters when the Zone Disable message type is used.

ALARM DESCRIPTION

The fourth column is used as the basis for the Alarm Description field for the alarm record that is created for the associated input group record. This column should be used as a custom device label that helps describe more information about the device or detector. It can be up to 59 characters in length and either be upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an existing alarm record in the Picture Perfect database. This is an illegal condition that nfrgen checks before any data is generated.

FACILITY

The fifth column is used to specify the facility id that will be used for the `input_group` and `alarm` records generated. During the execution of the nfrgen program, you will be prompted to select a Default Notifier Facility from the currently defined facilities on the system. If a Facility value is not specified in the input file, then the Default Notifier Facility that was selected will be used. To determine the valid `facility id` values, create a SQL report, using as the SQL statement `SELECT id, description FROM facility`, print the report, and keep it handy when creating the input file.

ALARM PRIORITY

The sixth column is optional, and contains the priority of the alarm record that will be created for the Alarm Description field. It is an integer value in the range 1-500. If this field is not present, the default alarm priority (specified during the running of `nfrgen`) will be used.

Column Descriptions for Annunciator Trouble Types Except Annunciator Trouble:

Column 1	Column 2	Column 3	Column 4	Column 5
MSG TYPE	ANNUNCIATOR NUMBER	ALARM DESCRIPTION	FACILITY	ALARM PRIORITY

MSG TYPE

This column is always `N` for Annunciator messages.

ANNUNCIATOR NUMBER

Column two must contain the two digit annunciator number (01-32). For numbers less than ten add a leading zero.

ALARM DESCRIPTION

The third column is used as the basis for the alarm description field for the alarm record that is created for the associated input group record. This column should be used as a custom device label that helps describe more information about the device or detector. It can be up to 59 characters in length and either upper or lower case.

It is acceptable to use the same alarm description for multiple input file data lines when installing the data generator records. Only one alarm record will be generated in this case and the appropriate input group records will point to the same alarm record.

Note: Do not use an alarm description that matches the description field of an existing alarm record in the Picture Perfect database. This is an illegal condition that nfrgen checks before any data is generated.

FACILITY

The fourth column is used to specify the facility id that will be used for the `input_group` and `alarm` records generated. During the execution of the `nfrgen` program, you will be prompted to select a Default Notifier Facility from the currently defined facilities on the system. If a Facility value is not specified in

the input file, then the Default Notifier Facility that was selected will be used. To determine the valid `facility id` values, create a SQL report, using as the SQL statement `SELECT id, description FROM facility`, print the report, and keep it handy when creating the input file.

ALARM PRIORITY

The fifth column is optional, and contains the priority of the alarm record that will be created for the Alarm Description field. It is an integer value in the range 1-500. If this field is not present, the default alarm priority (specified during the running of `nfrgen`) will be used.

Example input file

The following is an example of an input file for a Picture Perfect 4.5 system.

```
4.5
A|SMOKE(PHOTO)|103|BLDG 3 ROOM 7 EXHAUST HOOD|25|10
T|SMOKE(PHOTO)|103|BLDG 3 ROOM 7 EXHAUST HOOD|25|
W|SMOKE(PHOTO)|103|BLDG 3 ROOM 7 EXHAUST HOOD|25|
A|SMOKE (ION)|104|BLDG 3 ROOM 8 LABORATORY|25|
T|SMOKE (ION)|104|BLDG 3 ROOM 8 LABORATORY
W|SMOKE (ION)|104|BLDG 3 ROOM 8 LABORATORY
Z|FORWARD ZONE|Z001|BLDG 3 ROOMS 1-8||45
N|01|SECURITY STATION LOBBY 1||
```

The first six data lines, after the Picture Perfect version line, define several alarm and trouble message types to be monitored for some smoke detectors. The last two lines describe a zone disable and annunciator message type. An example of the input groups and alarm records that are generated from one line of an input file is shown in the section *Input group and alarm records generated by nfrgen* on page 215.

Input file recommendations

Setting up the input file requires knowledge of the system that is going to be monitored. There are numerous message types that can be monitored for a device. Making the monitoring decisions seems complicated, but careful use and understanding of the input file will result in ease of use and maintenance. The following recommendations should help in setting up the input file.

It is recommended that the same Alarm Description be used across different message types where the device type and LDD combinations are the same. This is shown in the example input file in the previous section.

Note: Since the same alarm description is used in the example input file for different message types, they are all using the same alarm record. As a result, only the first occurrence of the alarm priority need be included, as the alarm is created only once and only the first priority specified will be used for that alarm record.

It is recommended that all the possible message types, that apply to similar Device Type/ LDD combination with the same Alarm Description, be declared initially so they can be generated when using the installation portion of the tool. This is shown in the input file example for the two smoke detectors which each have a separate line entry for the `A`, `T`, and `W` message types. The three lines declared for the same smoke detector will generate 12 input group records that point to one alarm record. If particular statuses for a message type need to be disabled or deemed unimportant, they can be disabled individually through the Input Group form of Picture Perfect.

Always keep the input file around for future reference on how your system has been set up. It will be extremely useful in understanding what database records have been generated. It will be required information for Customer Support should you need help in configuring the interface.

Do not use an Alarm Description that matches an existing alarm record. This is an illegal condition that `nfrgen` checks before any data is generated.

Do not re-use the original input file that has had data added to it without doing an uninstall first. Un-installs are discussed in later sections. If you have new data for the generator and have not un-installed using `nfrgen` then you should uninstall or put it in a separate input file. Make sure the Alarm Description does not match an existing alarm record. This is an illegal condition that `nfrgen` checks before any data is generated.

Input file error checking

The input file will be checked for error conditions before any data records are generated. If an error occurs within the input file, the `nfrgen` tool will display the error on the screen. The type of error, the column it occurred in, and the line it occurred on in the input file will be given. The input file must be error free before any data records are generated.

Input group prefix

The Notifier interface uses the input group prefix to search specific input group records for messages that are to be monitored. This input group prefix was established during installation of the interface, for every serial line that was configured. The prefix for the Notifier interface is stored in the configuration file for that interface and is read every time it is started. With this in mind it is a requirement to know the input group prefix of the interface for which the `nfrgen` tool is going to generate database records. To determine this you must look in the appropriate `/cas/db/text/notifier_XXX.cfg` file where `XXX` is the tty name of the port for which the interface is configured. Examine the appropriate file and look for a line that starts with InpGrpPrefix. The value following this string is the input group prefix being used by the Notifier interface for that port.

Fixed messages types

The `nfrgen` tool will optionally allow you to install the fixed message types, which are messages that do not have a device type associated with them. These are messages that are generated by the Notifier panel rather than a specific device type. It is recommended that these messages be installed as they provide information about the panel and events that are triggered on the panel. Individual message types can later be disabled through the input group user interface if they are deemed unnecessary.

The following fixed message types will be generated for the description field of the input group records with the input group prefix attached to them in the description field. An example follows the fixed message types listed below.

- `ALL SYSTEMS NORMAL`
- `TROUBL SYSTEM TROUBLE`
- `ACK TB SYSTEM TROUBLE`
- `CLR TB SYSTEM TROUBLE`
- `ACL TB SYSTEM TROUBLE`
- `SIGNAL SILENCE REQUESTED`
- `SYSTEM RESET ACTIVATED`
- `DETECTOR TEST IN PROGRESS`
- `DETECTOR TEST:ALL OK`
- `DETECTOR TEST FAIL`
- `LAMP TEST ACTIVATED`
- `LAMP TEST COMPLETE`
- `BLOCK ACKNOWLEDGE`
- `ALARM SILENCED (Notifier 400 Specific)`
- `ACKNOWLEDGE (Notifier 400 Specific)`
- `MANUAL EVACUATE (Notifier 400 Specific)`

One alarm record is automatically generated for all the fixed message types which means each input group created will be associated to the same alarm record. It will have the input group prefix attached to it in the description field just like the input group records. The alarm record description field generated for the fixed message types is `NOTIFIER PANEL.`

For example, if the input group prefix used is `NFR1` and the fixed message type is `SYSTEM RESET ACTIVATED` then you would find the following input group description:

```
NFR1 SYSTEM RESET ACTIVATED
```

The associated alarm record that this input group would point to would have the description:

```
NFR1 NOTIFIER PANEL
```

Input group and alarm records generated by nfrgen

The input file processed by `nfrgen` produces input group and alarm database records that are inserted into the database when the tool is run. The input group records created are unique for each valid line in the input file. This is done by combining the input group prefix, message status possibilities, device type and loop/detector or zone number into the description field of an input group record. For example, use the following line of data and assume an input group prefix of `NFR1`.

```
A|SMOKE(PHOTO)|103|BLDG 3 ROOM 7 EXHAUST HOOD|25|10
```

This message would generate:

- four input group records with a facility id of 25 and the following description fields:

  ```
  NFR1 ALARM: SMOKE(PHOTO) 103
  NFR1 ACK AL SMOKE(PHOTO) 103
  NFR1 CLR AL SMOKE(PHOTO) 103
  ```

```
NFR1 ACL AL SMOKE(PHOTO) 103
```

- One alarm record would be generated with a facility id of 25, a priority of 10, and the following description field:

```
BLDG 3 ROOM 7 EXHAUST HOOD
```

Each of the four input group records would be linked to this alarm. These four input group records allow the interface to monitor the various status conditions for each message as they arrive for that device and loop/ detector or zone number. The `nfrgen` tool knows the status conditions for each message type and will generate the appropriate input group records.

There are obviously other important fields to an input group and alarm record that automatically get filled in by the generator. For the input group records, the following fields are set accordingly:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Parent Input Group	<BLANK>
Output Group	<BLANK>
Facility	(Value specified in input file, or default value)

The default values for the alarm records are:

Online	Yes
Reset Outputs	Auto Reset Outputs
Alarm Routing	Monitor and History
Priority	(Default value selected, when prompted for, by nfrgen)
Facility	(Default value selected, when prompted for, by nfrgen)

Using nfrgen – install

Before you start:

- You must have `root` permission to run the `nfrgen` tool.
- The database must be running.
  `nfrgen` will check this when the tool is invoked. If it is not running, it will attempt to start it.
- A valid input file must exist that contains the Picture Perfect version and data lines for the message types to be monitored for the described devices.
- You must know the input group prefix used by the Notifier interface that is being targeted for data generation. See the section *Input group prefix* on page 214 for more information.
- If in a redundant Picture Perfect environment, ensure you are on the current primary host, or if the system is down, the host that will be started as primary when the system is brought back up.

Follow these steps to use the nfrgen tool to install database records:

1. Log in as `root`.
2. Change to the directory where the input file name is located.
3. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct path environment variable that will give you access to the `nfrgen` tool and the database tools it uses.
4. Type: `nfrgen` Enter

   The following message appears on the screen:

   ```
   Notifier Data Generator 2.0
   Would you like to (i)nstall or (u)n-install data records?
   ```
5. To use the install option, type: `i` Enter

   The following messages will display:

   ```
   You have chosen to install database records.
   Please enter input file name:
   ```
6. Enter the name of your input file.

   The input file you entered will be displayed and you will be asked to confirm it.

   ```
   You entered as the input file name.................: panel.inp
   Is this correct(y/n)? [y]
   ```
7. To confirm the input file name, accept the default `[y]` by pressing Enter. Enter `n` to change the name.

If you entered `n,` you will be asked to re-enter the name. If you entered `y,` the following messages will display:

```
Enter the input group prefix to be used when creating the records. It must be 3 to 4
characters with the last character(s) numeric.
For example: NFR1
NOTE:This prefix must be the same one that is used by the interface that is being
targeted. Refer to the documentation for more information about input group
prefixes.
Enter the input group prefix.........................:
```

8. Enter the name of your input group prefix.

   The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: NFR1
Is this correct(y/n)?[y]
```

9. To confirm the input group prefix, accept the default `[y]` by pressing Enter. Enter `n` to re-enter the prefix.
10. If you entered `n,` you will be asked to re-enter the value.
    If you entered `y,` messages similar to the following will display, regarding the selection of a default facility for the Notifier interface:

```
**                                                                        **
**         Default Notifier Facility assignment portion                   **
**                                                                        **
When the input_group and alarm records are created, they will require an associated
facility. You need to select the default facility that will be used when creating
the input_group and alarm records, if an explicit one is not specified.
The currently available (defined) facilities will be displayed, and you will need to
make a selection from the provided list. If you need to create a new facility
specifically for the Notifier input_groups and alarms, then you should exit this
program, create the facility using the GUI, then re-run this program and then choose
that facility.
Do you wish to exit this program now (y/n)? [n]
```

11. Enter a `y` to exit the script or an `n` to enter a facility from the choices that will be provided.

    If you entered `y`, you will exit the program, and you may create a facility specifically for the Notifier interface, if you wish, then re-run the script.
    If you entered `n`, a list of the currently defined facilities on your system will be displayed, and you will need to make a selection. If the number of facilities on your system exceeds 18, you will need to press Enter to continue through the list, until you get to the prompt. When you observe the facility that you want to use by default with the interface, keep track of the number. This list will be similar to the following:

```
Acquiring facility list from database. Please wait...
The following facilities are defined on your system, and available to be chosen as
the default facility:
```

```
======================================================
      1:    DEFAULT FACILITY
      2:    Building 1
      3:    Building 2
      4:    Building 3
      5:    Building 4
      6:    Building 5
      7:    BLDG 1,2,3,4,5 AND PARKING
      8:    BLDG 2 STUDIO
      9:    BLDG 2 DESIGN AID
      10:   Security Control Center
      11:   Head Office
      12:   Building 1 Garage
      13:   Building 2 Garage
      14:   Building 3 Garage
      15:   Building 4 Garage
      16:   Building 5 Garage
      17:   Head Office Garage
      18:   Penthouse
Press RETURN for more...
      19:    B-1 COMP ROOMS
      20:    REGENT COURT
      21:   Facility A
      22:   Facility B
      23:   Notifier Facility
Enter the value of the default Notifier facility [1-23] ...: [1]
```

12. Enter the number of the default facility to use with the Notifier interface. This value will be used when creating `input_group` and `alarm` records from the entries in the input file, for which a specific facility is not specified.

    The facility you selected will be displayed, and you will be asked to confirm it.

```
You have selected as the default facility.......: Notifier Facility
Is this ok (y/n)?[y]
```

13. Enter a `y` to confirm, or an `n` to re-enter the default facility.

    If you entered `n`, you will be asked to re-enter the value.
    If you entered a `y`, the facility you selected, and its `id` will be displayed, and you will be prompted for the default alarm priority to use for the alarms created.

```
Default Facility chosen is ..................: [Notifier Facility]
**                                                              **
**      End of Default Notifier Facility assignment portion     **
**                                                              **
Do you want to install the fixed message types (y/n)? [y]
```

14. Enter `y` to install the fixed message types or `n`.

    Using the prefix specified, the Notifier type will be retrieved from the configuration file. The input file will then be checked for formatting errors, and you will be prompted to enter the default alarm priority as follows:

```
Getting notifier type...
Checking input file for formatting errors...
Enter the default alarm priority. It is the priority that will be used for fixed
messages, and any alarm that has no priority specified.
Value may be in the range 1-500 [default=50]:
```

15. Enter the value for the default alarm priority, or Enter to accept the existing default.

    The alarm priority you entered will be displayed and you will be asked to confirm it.

```
Selected default alarm priority is: 65
Is this correct (y/n)? [y]
```

16. Enter a `y` to confirm or an `n` to re-enter the default alarm priority.

    If you entered `n,` you will be asked to re-enter the value.
    If you entered `y,` the input data will be checked. If there were errors, they will be displayed and you will need to correct those errors and begin this process again.

    If no errors are found, the input group and alarm records will be entered into the Picture Perfect database. You will see messages similar to the following:

```
Checking input file data...
Installing Records...

DBLOAD Load Utility INFORMIX-SQL Version 9.30.UC4
Copyright (C) Informix Software, Inc., 1984-1997
Software Serial Number AAB#J328673

Table input_group had 49 row(s) loaded into it.
Table alarm had 6 row(s) loaded into it.
statement = update statistics for table input_group
statement processed OK
statement = update statistics for table alarm
statement processed OK

Installation complete.
```

Using nfrgen to generate new device data after an initial installation

If there are new devices to be monitored by the Notifier interface after an `nfrgen` installation, then one of the following methods should be used when using the `nfrgen` tool. Use these methods when you are adding new devices to be monitored by the interface.

If you are going to be adding or changing message types in the input file for existing database records, then proceed to the section, *Using nfrgen to change or add message types for an existing device after an initial installation* on page 221.

Note: If the Notifier interface is running in a Redundant Picture Perfect environment, nfrgen must be run on the current primary machine only. The normal operation of the redundant Picture Perfect system will sweep the database updates made by nfrgen on the primary machine over to the backup machine.

Method 1

1. Create a new input file with the new data lines.
2. Invoke `nfrgen` and use the new input file. Do not install the fixed message types if they have been previously installed. The `nfrgen` tool will always ask whether you want to install these message types.
3. Once the new inputs have been added, you can append them to the original input file for that interface so that there exists a single input file with all the data.

Method 2

1. Use `nfrgen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix.

   Note: Any input group using the targeted input group prefix to be un-installed that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file.

2. Add the new device data to the existing input file.
3. Invoke `nfrgen` and use the modified input file to re-create the data records.

Using nfrgen to change or add message types for an existing device after an initial installation

If you need to add additional message types or change the defined data for an existing Device Type, LDD/ZXXX and Alarm Description, you should do the following.

1. Use `nfrgen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix.

   Note: Any input group using the targeted input group prefix to be un-installed that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file.

2. Change or add the message types.
3. Invoke `nfrgen` and use the modified input file to re-create the data records.

Example

If you have an input file that has information for a smoke detector that is going to be monitored for alarm message types and you now want to monitor for trouble and walk test message types.

```
4.5
A|SMOKE (ION)|204|Second Floor Room 10|25|5
```

You would first use `nfrgen` and uninstall based upon the input group prefix. You would then edit the input file and add two more lines of data to define the trouble and walk test message types. The resulting input file would look like the following:

```
4.5
A|SMOKE (ION)|204|Second Floor Room 10|25|5
T|SMOKE (ION)|204|Second Floor Room 10||
W|SMOKE (ION)|204|Second Floor Room 10||
```

Now invoke the `nfrgen` tool to re-create the data records using the modified input file and the same input group prefix that was used to uninstall.

nfrgen – uninstall

This portion of `nfrgen` removes the database records associated with a specific Notifier interface. Before running the uninstall program, you will need to know the input group prefix.

Note: It is a good idea to backup the database before using the uninstall portion of the nfrgen tool. This can be done through the Control/Backup form. See your Picture Perfect documentation for more details.

Input group prefix

All input group records that have descriptions that match the input group prefix (the first 3 to 4 characters) will be removed from the database. The alarm records that each input group points to will be removed as well but with one exception. If the Alarm record is associated to any other input group records outside of the ones to be removed, the `nfrgen` tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the `nfrgen` tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it is does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records that other input group records are linked.

Note: Any input group using the targeted input group prefix to be un-installed that was created manually through the Picture Perfect Input Group form will be removed which means it will be permanently lost if its data was not originally part of the input file.

Using nfrgen – uninstall

Before you start:

- You must have `root` permission to run the `nfrgen` tool.
- The database must be running. `nfrgen` will check this when the tool is invoked, and attempt to start the database if it is not running.
- You must know the input group prefix used by the Notifier interface that is being targeted for un-installation.
- If in a redundant Picture Perfect environment, ensure you are on the current primary host, or if the system is down, the host that will be started as primary when Picture Perfect is re-started.

Follow these steps to use the nfrgen tool to un-install database records:

1. Log in as `root`.
2. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct path environment variable that will give you access to the `nfrgen` tool and the database tools it uses.
3. Type: `nfrgen` Enter

   The following message appears on the screen:

   ```
   Notifier Data Generator 2.0
   Would you like to (i)nstall or (u)n-install data records?
   ```
4. To use the install option, type: `u` Enter

   The following messages will display.

   ```
   You have chosen the UN-INSTALL portion of this script. You must enter the input
   group prefix to un-install the Notifier database records. This is the first 3 to 4
   characters used in the description field of the input group records. Entering this
   prefix will result in the removal of the input group and associated alarm records
   from the database.
   If running multiple interfaces make sure you enter the prefix that matches the input
   group prefix used for that particular interface. If properly installed each Notifier
   interface should have a different input group prefix that is used specifically for
   that interface.
   Do you know the input group prefix and want to continue (y/n)? [y]
   ```
5. To continue, press `y`. To stop, press `n`.

   If you chose to continue, the following message will display.

   ```
   Enter the input group prefix..........................:
   ```
6. Enter the input group prefix.

   The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was................: NFR1
Is this correct(y/n)? [y]
```

7. To continue, press `y.` To stop, press `n.`

   If you chose to continue, the records will be deleted and you will see messages similar to the following:

```
Making alarm id checks...
Deleting records...Complete.
The following log files contain the SQL statements and errors logged during the
delete process
       /tmp/nfr_inpgrp_del.log
       /tmp/nfr_alarm_del.log
Un-install completed!
```

   The un-installation is complete. You will return to the `#` prompt or back to the removal script.

Using Picture Perfect to configure the Notifier interface

For a successful configuration, follow these steps, which will be detailed in the sections that follow:

1. Add or modify input groups for the 13 possible messages.
2. Add or modify alarms.
3. Add or modify output groups and outputs, if desired.
4. Monitor alarms.

Note: If the Notifier package is installed in a Redundant Picture Perfect environment, all operations should be performed on the current primary machine. The normal operation of the redundant Picture Perfect system will sweep any database changes made over to the backup machine.

Adding or modifying input groups

The input group record description field is the key to identifying specific Notifier panel messages. The format of the input group description is defined such that it can be set up to identify the specific message types coming from the panel for a specific device type.

Due to the numerous device types, statuses and possible locations, a set of rules must be established for the interface when defining an input group description. The rules are basically formatting issues so that the interface can look for matches in the database using the input group description field. These rules will vary depending on the message type to be monitored. Message types that have device and/or status variability are as follows:

- Alarm
- Trouble
- Zone Disable
- System Trouble
- Annunciator Trouble
- Walk Test
- Module Activation
- Supervisory Activation

Message types that do not have a device type or status are considered fixed messages and will have a simpler set of rules for setting up the input group. A complete list of the fixed message types that the Notifier panel will recognize is listed in *Fixed messages types* on page 214.
The following message types are considered fixed message types:

- All Systems Normal
- Signal Silence
- System Reset
- System Test
- Lamp Test
- Block Acknowledge

It is crucial to understand the format for each message type when setting up an input group since this is the key to monitoring messages from the Notifier panel. The input group description field is limited to 60 characters which will be fully used in many cases to uniquely identify a specific message type and status for a particular device. Each message type will always use the input group prefix as the first part of the description. See *Input group prefix* on page 214 for more information.

If you are going to add a number of input group records for the Notifier interface it is suggested that you use the `nfrgen` data generator tool which is capable of quickly producing input group and associated alarm records automatically given a formatted input file. See the section entitled *Using nfrgen* on page 209 for more information on using this tool.

The input group prefix used in any of the listed message types must match the one established in the appropriate configuration file. See *Input group prefix* on page 214 for more information.

When establishing an input group record, the description field must follow the format for the appropriate message type. Exactly one space must be used between the columns for each of the message types described in the following sections. For messages types that have a `<DEV TYPE>` column, the spacing within the column must be the same as is listed in *Table 13, Device Types* on page 236.

Note: Be aware that input groups and associated alarms that are created manually will be removed if the uninstall portion of the nfrgen tool is run since it removes records according to the input group prefix. Database records added manually using Picture Perfect should be added to a nfrgen input file so they may later be recreated, if necessary, in the event nfrgen uninstall option is used.

Alarm Message Type

To recognize **Alarm Message** types use the following format in the input group description.

```
<IGP> <STATUS> <DEV TYPE> <LDD>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `STATUS` is one of the following `ALARM:`, `ACK AL`, `CLR AL` or `ACL AL`.
- `DEV TYPE` is one of the device types from the detector or monitor module types listed in *Table 13, Device Types* on page 236.
- `LDD` is the loop number and detector/module number. `L` equates to the loop number (1-9, 0=10). `DD` equates to the detector/module number (1-99).

For example to configure a `SMOKE (ION)` detector located at `LDD 905` for the four available status types, you would create four input groups each with the following descriptions:

```
NFR1 ALARM: SMOKE (ION) 905
NFR1 ACK AL SMOKE (ION) 905
NFR1 CLR AL SMOKE (ION) 905
NFR1 ACL AL SMOKE (ION) 905
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Trouble Message Type

To recognize **Trouble Message** types use the following format in the input group description.

```
<IGP> <STATUS> <DEV TYPE> <LDD>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `STATUS` is one of the following `TROUBL`, `ACK TB`, `CLR TB` or `ACL TB`.
- `DEV TYPE` is one of the device types from the detector, monitor module or control module types listed in *Table 13, Device Types* on page 236.
- `LDD` is the loop number and detector/module number. `L` equates to the loop number (1-9, 0=10). `DD` equates to the detector/module number (1-99).

For example to configure a `SMOKE (ION)` detector located at `LDD 905` for the four available status types, you would create four input groups each with the following descriptions:

```
NFR1 TROUBL SMOKE (ION) 905
NFR1 ACK TB SMOKE (ION) 905
NFR1 CLR TB SMOKE (ION) 905
NFR1 ACL TB SMOKE (ION) 905
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Zone Disable Message Type

To recognize **Zone Disable** message types use the following format in the input group description.

```
<IGP> <STATUS> <DEV TYPE> <ZXXX>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `STATUS` can be one of the following `TROUBL`, `ACK TB`, `CLR TB` or `ACL TB`.
- `DEV TYPE` is one of the zone device types in *Table 13, Device Types* on page 236.
- `ZXXX` is the zone identifier `Z` and zone number `XXX` (1-240).

For example to configure for a `FORWARD ZONE` with a zone number of `150` for the four available status types you would create four input groups each with the following descriptions:

```
NFR1 TROUBL FORWARD ZONE Z150
NFR1 ACK TB FORWARD ZONE Z150
NFR1 CLR TB FORWARD ZONE Z150
NFR1 ACL TB FORWARD ZONE Z150
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

System Trouble Message Type

To recognize **System Trouble** message types use the following format in the input group description.

```
<IGP> <STATUS> <SYSTEM TROUBLE>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `STATUS` can be one of the following `TROUBL`, `ACK TB`, `CLR TB` or `ACL TB`.
- `SYSTEM TROUBLE` is a fixed field.

Note: When monitoring this message type, you must consult the Notifier panel or printer for the system trouble index and description of the system trouble.

For example to configure for **System Trouble** messages for the four available status types you would create four input groups each with the following descriptions:

```
NFR1 TROUBL SYSTEM TROUBLE
NFR1 ACK TB SYSTEM TROUBLE
NFR1 CLR TB SYSTEM TROUBLE
NFR1 ACL TB SYSTEM TROUBLE
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Annunciator Trouble Message Type

To recognize **Annunciator Trouble** message types use the following format in the input group description.

```
<IGP> <STATUS> <ANNUNCIATOR> <XX>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `STATUS` can be one of the following `TROUBL`, `ACK TB`, `CLR TB` or `ACL TB`.
- `ANNUNCIATOR` is a fixed field.
- `XX` is the two digit annunciator number (01-32). For numbers less than ten, add a leading zero.

Note: When monitoring this message type, you must consult the Notifier panel for the Annunciator Trouble index.

For example to configure annunciator number 25 for the four available status types you would create four input groups each with the following descriptions:

```
NFR1 TROUBL ANNUNCIATOR 25
NFR1 ACK TB ANNUNCIATOR 25
NFR1 CLR TB ANNUNCIATOR 25
NFR1 ACL TB ANNUNCIATOR 25
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Walk Test Message Type

To recognize **Walk Test** message types use the following format in the input group description. **Walk Test** messages are received when the Notifier panel is under **Walk Test** mode. Messages with the status of UNPROG, UNINST, and UNTEST are recognized when those types of reports are generated through the panel. Messages with the TESTXX status are recognized as they occur and are ignored during a Tested Devices Report. See your Notifier Operation manual for information on Walk Tests.

```
<IGP> <STATUS> <DEV TYPE> <LDD>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- STATUS can be one of the following UNPROG, UNINST, TESTXX, UNTEST.
- DEV TYPE is one of the device types from the detector, monitor module or control module device types listed in *Table 13, Device Types* on page 236. For unprogrammed devices DETECTOR or MODULE
- LDD is the loop number and detector/module number. L equates to the loop number (1-9, 0=10). DD equates to the detector/module number (1-99).

For example, to configure a SPRNKLR MNTR detector located at LDD 405 for the four available status types you would create four input groups each with the following descriptions:

```
NFR1 UNPROG SPRNKLR MNTR 405
NFR1 UNINST SPRNKLR MNTR 405
NFR1 TESTXX SPRNKLR MNTR 405
NFR1 UNTEST SPRNKLR MNTR 405
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Note: When monitoring this message type with the "TESTXX" status, you must consult the Notifier panel or printer for the test count which will be shown in place of the XX.

Module Activation Message Type

To recognize **Module Activation** message types use the following format in the input group description.

```
<IGP> <STATUS> <DEV TYPE> <LDD>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- STATUS can be one of the following ACTIVE or CLEAR.
- DEV TYPE is one of the non **Alarm Monitor** module or control module device types listed in *Device types* on page 236.
- LDD is the loop number and detector/module number. L equates to the loop number (1-9, 0=10). DD equates to the detector/module number (1-99).

For example to configure a SPEAKER device located at LDD 105 for the two available status types you would create four input groups each with the following descriptions:

```
NFR1 ACTIVE SPEAKER 105
NFR1 CLEAR SPEAKER 105
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Supervisory Activation Message Type

To recognize **Supervisory Activation** message types, use the following format in the input group description:

```
<IGP><STATUS><DEV TYPE><LDD>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- STATUS can be one of the following: ACTIVE or CLR ACT.
- DEV TYPE is one of the non **Alarm Monitor** module or control module device types listed in *Table 13, Device Types* on page 236.
- LDD is the loop number and detector/module number. L equates to the loop number (1-9, 0=10). DD equates to the detector/module number (1-99).

For example, a PAGE device located at LDD 105 for the two available status types would create four input groups each, with the following descriptions:

```
NFR1 ACTIVE PAGE 105
NFR1 CLR ACT PAGE 105
```

The example above assumes you are using an input group prefix of NFR1, which is established at installation.

All Systems Normal Message Type

To recognize **All Systems Normal** messages use the following format in the input group description.

```
<IGP> <ALL SYSTEMS NORMAL>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- ALL SYSTEMS NORMAL is a fixed field.

For example:

```
NFR1 ALL SYSTEMS NORMAL
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Signal Silence Message Type

To recognize **Signal Silence** messages use the following format in the input group description.

```
<IGP> <SIGNAL SILENCE REQUESTED>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- SIGNAL SILENCE REQUESTED is a fixed field.

For example:

```
NFR1 SIGNAL SILENCE REQUESTED
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

System Reset Message

To recognize **System Reset** messages use the following format in the input group description.

```
<IGP> <SYSTEM RESET ACTIVATED>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- SYSTEM RESET ACTIVATED is a fixed field.

For example:

```
NFR1 SYSTEM RESET ACTIVATED
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

System Test Message

To recognize **System Test** message types use the following format in the input group description.

```
<IGP> <TEST TYPE>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- TEST TYPE is one of three fixed fields DETECTOR TEST IN PROGRESS, DETECTOR TEST:ALL OK, DETECTOR TEST FAIL.

For example to configure for **System Test** messages for the 3 test types you would configure the following input group descriptions:

```
NFR1 DETECTOR TEST IN PROGRESS
NFR1 DETECTOR TEST:ALL_OK
NFR1 DETECTOR TEST FAIL
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Note: When monitoring this message type, you must consult the Notifier panel or printer for the list of detectors on each lib in the case of DETECTOR TEST:ALL OK. The Notifier panel or printer must be consulted for a list of detectors that fail in the case of the DETECTOR TEST FAIL message.

Lamp Test Message

To recognize **Lamp Test** message types use the following format in the input group description.

```
<IGP> <LAMP TEST TYPE>
```

where:

- IGP is the input group prefix. Up to 4 characters.
- LAMP TEST TYPE is one of two fixed fields: LAMP TEST ACTIVATED, or LAMP TEST COMPLETE.

For example to configure for the two **Lamp Test** messages you would configure the following input group descriptions:

```
NFR1 LAMP TEST ACTIVATED
NFR1 LAMP TEST COMPLETE
```

The above example assumes you are using an input group prefix of NFR1 which is established at installation.

Block Acknowledge

To recognize **Block Acknowledge** messages use the following format in the input group description.

```
<IGP> <BLOCK ACKNOWLEDGE>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `BLOCK ACKNOWLEDGE` is a fixed field.

For example:

```
NFR1 BLOCK ACKNOWLEDGE
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Alarm Silenced

To recognize the **Alarm Silenced** messages use the following format in the input group description.

```
<IGP> <ALARM SILENCED>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `ALARM SILENCED` is a fixed field.

For example:

```
NFR1 ALARM SILENCED
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Acknowledge

To recognize the **Acknowledge** messages use the following format in the input group description.

```
<IGP> <ACKNOWLEDGE>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `ACKNOWLEDGE` is a fixed field.

For example:

```
NFR1 ACKNOWLEDGE
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Manual Evacuate

To recognize the **Manual Evacuate** messages use the following format in the input group description.

```
<IGP> <MANUAL EVACUATE>
```

where:

- `IGP` is the input group prefix. Up to 4 characters.
- `MANUAL EVACUATE` is a fixed field.

For example:

```
NFR1 MANUAL EVACUATE
```

The above example assumes you are using an input group prefix of `NFR1` which is established at installation.

Adding an input group

Follow these steps to add an input group:

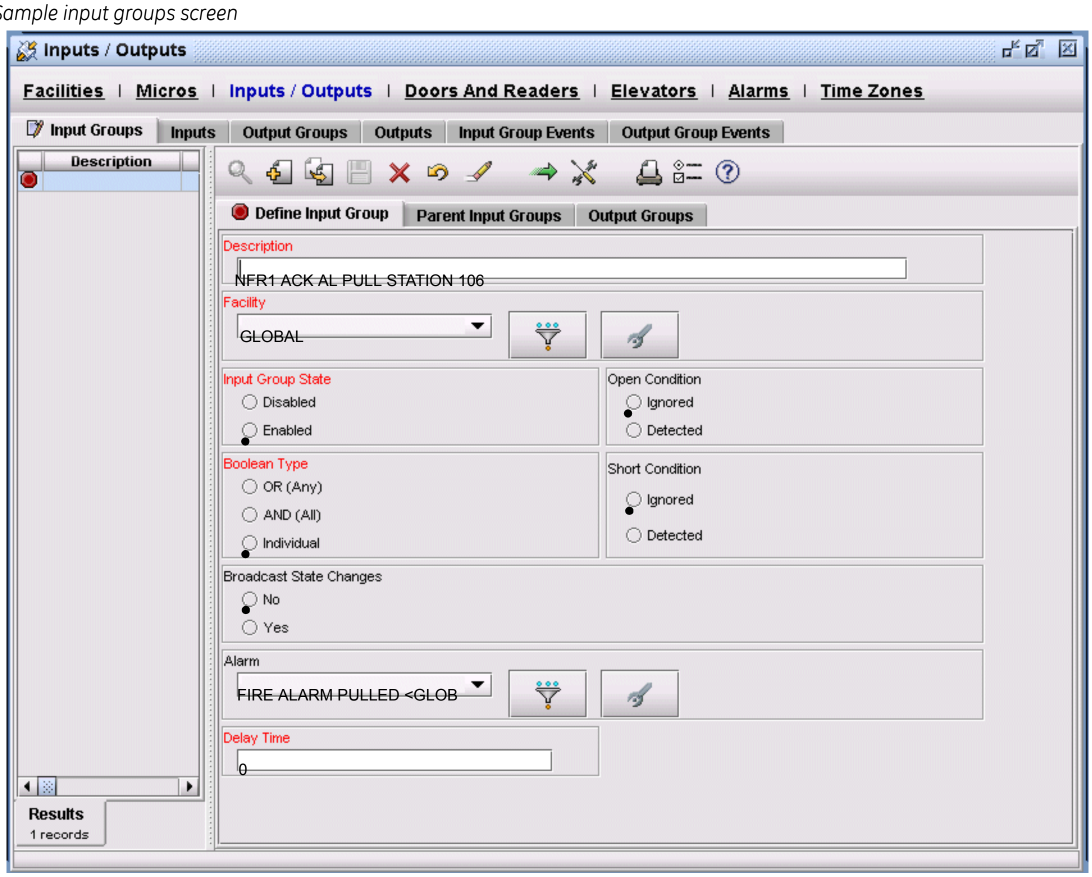
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Facility	(Facility the input group resides in)

3. Click **Save**.
4. Click **New** to add another input group.

Figure 72. Sample input groups screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

Each notifier input group will need to be linked to an alarm record which can be routed to show up on the **Alarm Monitor** and be recorded by **Alarm History**. The linking is done through the **Input Group** form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the Notifier interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the **Alarm Monitor**.

The alarm record description field should be used to further identify or describe the Notifier input group it is going to be linked to. Several input group records can be linked to the same alarm but it would be prudent to set up one alarm record for each input group record(s) that have the same device and location. The description field has no restrictions or required format since all the unique information for a message type is located in the input group description. If there are similar alarm descriptions that apply to unique devices then separate alarm records and input group records should be created for each unique device to be recognized.

For example, if you are going to be monitoring alarm messages and the four possible status conditions for a detector you would have four input groups that could point to one alarm record. The alarm record could further describe the location of the detector. An example of this alarm record is shown in *Figure 73*

For message types that are of a fixed nature, as described in the sections *Fixed messages types* on page 214 and *Adding or modifying input groups* on page 225, the description field could be filled in with information on the Notifier panel. With this concept in mind only one alarm record would have to be created to handle those types. The input groups for those fixed message type would all be linked to the same alarm record which may have a description like:

```
Notifier Panel 1 Bldg 7
```

The alarm routing should be set up to according to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select `NONE` from the **Set Alarm Routing** picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

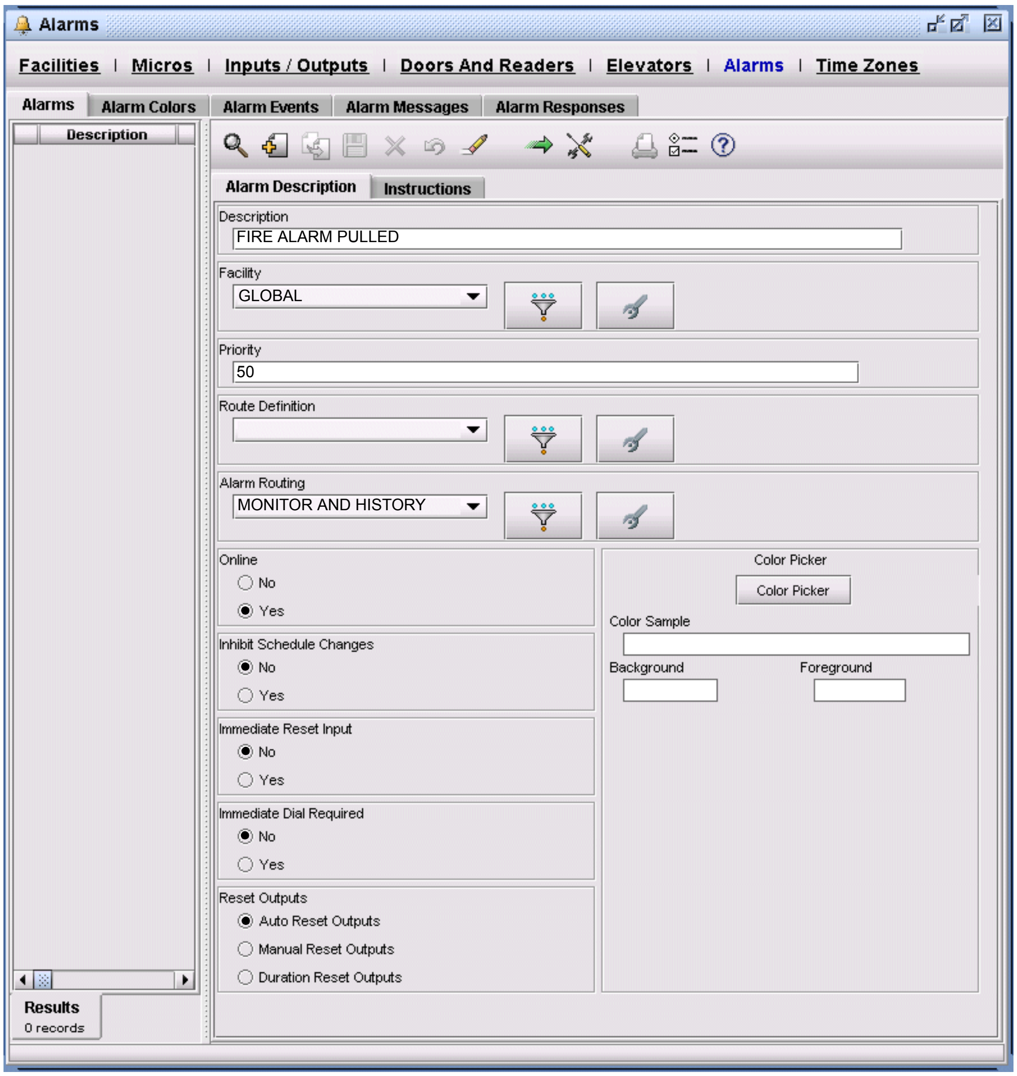
   - Online — Yes
   - Reset Outputs — Auto Reset Outputs

Set the priority, alarm routing, and instructions as needed.

Note: The routing must be set to one of the possible selections that includes the monitor for an alarm to show up on the Alarm Monitor.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 73. Sample alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, that is, door strikes, lights or sirens, when notifier panel messages are received, you will need to configure an output group and a output. The output group must be linked to the input group for the Notifier message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the Outputs forms may not apply since this is a one way communication between the Notifier panel and Picture Perfect.

Note: Configuring output groups and outputs is optional. nfrgen does not create outputs or link them to input groups, so if the nfrgen uninstall option is used to remove the Notifier records then they are recreated with nfrgen install, the output group linkings will need to be recreated manually.

Monitoring alarms

You are now finished with the basic configuration of the Notifier package. The Notifier messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell the type of device, status and loop number and detector/module number of the reported alarm. The complete message of the alarm should be read from the Notifier panel or from a printer connected to that panel.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the Notifier panel since this is a one way communication.

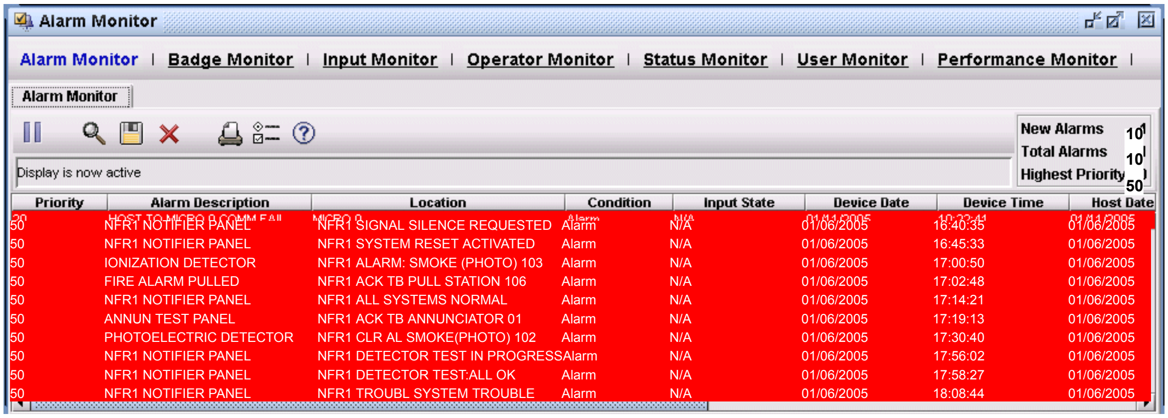
All messages recognized by the Notifier interface will show a condition of `Alarm` and an Input State of `N/A`. As with other Picture Perfect alarms that come into the Alarm Monitor the Cou`nt` column will increment for those alarms that have come in multiple times. The only way to remove Notifier alarms from the Alarm Monitor is to use the remove button to remove all alarms or to respond and remove them individually. The time displayed in the Alarm Monitor is the time that Picture Perfect maintains and not the time from the Notifier panel.

Monitoring alarms during notifier reporting

The Notifier panel is capable of producing a variety of reports about the system and points that have been installed. Reports generated to the Notifier printer are normally interrupted by the panel when a pending condition (`Alarm`, `Trouble`, etc.) occurs and are sometimes printed within the report itself. Since the Notifier interface uses the same serial line as the printer the pending conditions will be detected by the interface and properly monitored if they have been set up to do so because a pending condition can be distinguished from an actual line contained within a report.

If the interface has been set up to monitor Walk Test messages, then the messages that are part of the Unprogrammed, Uninstalled or Untested Device reports will be recognized since that is when these kind of messages are received. The messages that are part of the Tested Devices report will be ignored since the actual test messages are recognized as a device is tested during a walk test.

Figure 74. Sample alarm monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. In this scenario, a system uses the input group prefix of `NFR1` and has appropriate input group/alarm records to recognize the conditions coming from the panel.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created manually or by the nfrgen tool. The Location column corresponds to the description field of the appropriate input group record which was created manually or by the `nfrgen` tool.

Device types

This table lists the valid device types that can be monitored and is provided as a convenience. It is not necessarily a complete list of all available device types. If you have a device type that needs to be monitored and it is not listed here, you can enter a new device type up to 12 characters in length.

Table 13. Device Types

Detectors	Monitor Modules	Control Modules	Zones
123456789012	123456789012	123456789012	123456789012
SMOKE(PHOTO)	MONITOR	CONTROL	FORWARD ZONE
SMOKE (ION)	PULL STATION	TELEPHONE	REVERSE ZONE
HEAT(ANALOG)	WATER FLOW	FORM C RELAY	
FIXED HEAT D	SMOKE (CONV)	POWER (CONV)	
FIXED PHOT D	SPRNKLR MNTR	ALARMS PEND	
ION DUCT DET	TRBL MONITOR	TRBLS PEND	
	NON ALM MON	GENERAL PEND	
	MON NORM CLD	CMX CONTROL	
	MON PULL STA	CMX FORM C	
	MONITOR PAGE	SPEAKER	

Table 13. Device Types (continued)

Detectors	Monitor Modules	Control Modules	Zones
123456789012	123456789012	123456789012	123456789012
	NON ALARM	GN ALARM EVC	
		GN ALARM	
		GN ALRM FORC	
		GN WATER FLW	
		GN TRBL FORC	
		GN WAT FORC	
		GN SPSU FORC	
		TROUBLE	
		TROUBLE FORC	
		PAGE	
		FORMC MANUAL	

Testing the interface

Once the input groups and alarm database records have been set up and the interface is running it should be tested to make sure messages are being correctly recognized by the interface. If the fixed message types, see page .214, have been installed, the simplest way to begin testing is to generate some messages from the Notifier panel by clicking the Signal Silence, System Reset, System Test or Lamp Test buttons on the panel. The Alarm Monitor should receive the appropriate messages if they have been set up correctly. If the alarms are not being shown on the Alarm Monitor, then the appropriate input group description should be checked to make sure that it follows the format specified for that message type listed under the *Adding or modifying input groups*section of this document. Make sure the appropriate Input Group Prefix is being used in the description field and that it matches the one established upon installation in the `notifier_XX.cfg` configuration file.

Actual device testing should be performed for those devices that are going to be monitored. If the Walk Test messages are being monitored for each device then a Walk Test could be performed to test the devices without actually triggering an actual alarm condition.

If there is a printer hooked up to the Notifier panel, then the resulting messages that are being monitored by the interface can be compared against the printed output in terms of the parts of a message that are used to make up an input group or alarm record description field. If there are messages that are not being recognized by the interface that have been set up to do so and they are being printed, then call Customer Support for further assistance in debugging the problem.

Advanced configuration

The Notifier interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/notifier_ttyN.cfg
/cas/db/text/notifier.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/notifier_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the Notifier device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. The Notifier interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a Notifier device attached to port `/dev/tty5: /cas/db/text/notifier_tty5.cfg`

```
#
#             notifier_tty5.cfg
#             Copyright (C) 1995-2003 GE Interlogix, Inc.
               All Rights Reserved.
# This file generated from the following installation script.
#
# notifier.inst 1.18 06/18/03
#
# This file contains the configuration information for the NOTIFIER
# Fire alarm interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from. It also contains the unique input group prefix
# that the interface will use to recognize specific input group
# database records using this prefix.
#
# The InpGrpPrefix parameter is a required parameter in the
# configuration file. This parameter is the prefix that must be used
# in the description field for all input groups that are to be
# recognized by the interface. If this parameter is changed here it
# must be changed for all the input groups that are using it as a
# prefix. This prefix is case sensitive so the declaration in here
# must match the one used in the input group description. This
# description must not exceed 4 characters and the last character or
# characters should be numeric. The input group prefix declared in
# here will be read when the interface is started. If more than one
# interface is installed then the input group prefix must be unique
# in each configuration file.
#
# An example prefix would be "NFR1" and the next interface that is
# installed could be "NFR2"
```

```
# NOTE: In using the Notifier INA, only 1 per system is permitted, so
# the input group prefix will always be "NFR".

# The following values are unique to the Notifier interface, do not
# change unless instructed by GE Interlogix - CASI
Icanon                          n
#
# The following values are setup based on your installation responses.
#
NotifierType                    Notifier AM2020 AFP1010
InpGrpPrefix                    NFR1

PortName                        /dev/tty5
PortBaud                        2400
CharacterSize                   8
Parity                          e
StopBits                        1
Xon                             y
Xoff                            y
```

/cas/db/text/notifier.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the Notifier redundant configuration file: `/cas/db/text/notifier.redundant.cfg`

```
#
#            notifier.redundant.cfg 1.11
#            Copyright (C) 1995-2003 GE Interlogix, Inc.
#             All Rights Reserved.
# notifier.redundant.cfg 1.12 06/18/03
#
# This file contains the configuration information for the NOTIFIER
# FIRE ALARM interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper                   Y
RedundantHosts                  primary1,backup1
```

Interface data file backup and restore

The Notifier interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 14, Notifier interface data files* on page 240. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Notifier software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Notifier interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 14. Notifier interface data files

Data File Name	Description
`/cas/db/text/notifier_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/notifier.redundant.cfg`	Notifier redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix I Configuring an OH Receiver interface

This appendix provides information on configuring the OH Receiver interface to Picture Perfect which acts as a secondary monitoring system for the NX-8E, Ademco, Radionix, or any panel that can report alarms in SIA or CID formats.

In this appendix:

Introduction

The OH Receiver interface to Picture Perfect acts as a secondary monitoring system for the NX-8E, Ademco, Radionix, or any panel that can report alarms in SIA or CID formats. It recognizes only the predefined messages types built into the interface and set up through Picture Perfect.

It does this by acting as a filter that recognizes predefined alarm conditions coming in over the serial line. When an alarm condition has been detected, the OH Receiver interface picks up a unique `line/Partition/Account` contained within one of the message lines from the serial port. This unique `line/Partition/Account`, combined with the Receiver number, must have been previously set up through the input group form from Picture Perfect along with an associated alarm from the alarm form. If there is a match, meaning that the `line/Partition/Account` was found along with the alarm, an Alarm message is sent to be processed by Picture Perfect. Further message information should be obtained from the primary monitoring device which is the NX-8E, Ademco, or Radionix panel.

Communication can be using dial-up or ethernet connection. Dial-up communication is between the OH2000E Receiver and any of the following panels, NX-8E, Ademco, Radionix, or any panel the can report alarms in SIA or CID formats. Network communication is between the OH Network Receiver and an NX-8E with an NX-590E network module.

Communication from the OH Receiver to the Picture Perfect host is using a serial line connection. The communication is unidirectional, meaning the interface only receives data from the OH Receiver and does not send anything back.

Messages or alarms recognized by the OH Receiver are looked up in the Picture Perfect database using the Input Group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group.

Note: The monitoring function set up using Picture Perfect, OH Receivers[1], and NX-8E panels can be used in conjunction with access control using Picture Perfect, Micro/5 controllers, and Model 940 readers. When using this configuration, the NX-8E keypad must be installed adjacent to the Model 940 Proximity Card Reader and the OH2000 Receiver must be installed adjacent to the Picture Perfect host in order to be UL compliant.

Redundant systems

The OH Receiver interface to Picture Perfect will support operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single OH Receiver. Connectivity is achieved using a splitter between the Picture Perfect system and the OH Receiver. This allows the physical connection of the OH Receiver to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the OH Receiver software executes on both Picture Perfect hosts and both receive alarm notifications from the OH Receiver. However, only the interface software executing on the primary host processes the alarms. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the OH Receiver.

---

1. The OH Network Receiver is not part of the UL evaluated configuration.

Software requirements

The software requirements for the OH Receiver interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect OH Receiver (`oh_receiver`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect Base (`base`) package
- Picture Perfect Redundant System (`pprs`) package
- Picture Perfect OH Receiver (`oh_receiver`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

For the OH Receiver system:

- OH Network system
  - OH Network Receiver
  - NX-8E panel
  - Serial Line Cable to connect from the Picture Perfect system to the OH Receiver. The figures that follow reflect the various cable configurations. You can create the necessary cable configuration by adding a null modem adapter, a gender changer, and/or a DB9/DB25 serial port adapter to a straight DB9F to DB9M cable.

Figure 75. Picture Perfect AIX System to OH Network Receiver

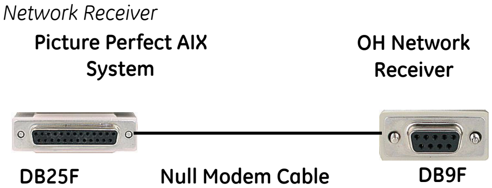


Figure 76. Picture Perfect Linux System with a Digi Port Expander to OH Network Receiver

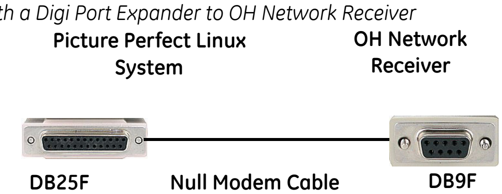
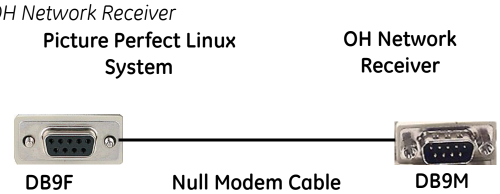


Figure 77. Picture Perfect Linux System to OH Network Receiver



- OH Dial-up system
  - OH2000E Receiver
  - NX-8E, Ademco, or Radionix panel

Note: Any panel that connects to the OH2000E Receiver must transmit using one of the following protocols in order to be recognized by Picture Perfect:

- SIA
- CID
- Radionics Modem2 6112
- Radionics Modem2 8112
- Radionics Modem2 7112
- Radionics Modem2 9112
- Radionics Modem2 7212

- Serial Line Cable to connect from the Picture Perfect system to the OH Receiver. The figures that follow reflect the various cable configurations. You can create the necessary cable configuration by adding a null modem adapter, a gender changer, and/or a DB9/DB25 serial port adapter to a straight DB9F to DB9M cable.

Note: The only connection verified by UL is the DB8F to DB8M using a null modem cable.

Figure 78. Picture Perfect AIX system to OH 2000E

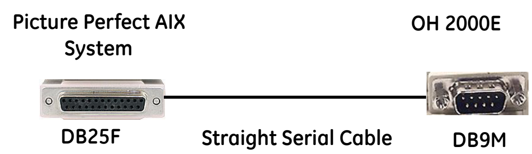


Figure 79. Picture Perfect Linux system with a Digi Port expander to OH 2000E

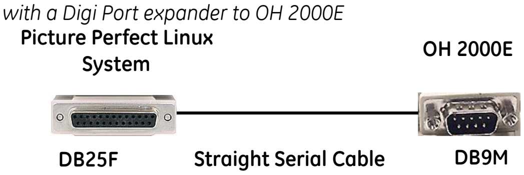
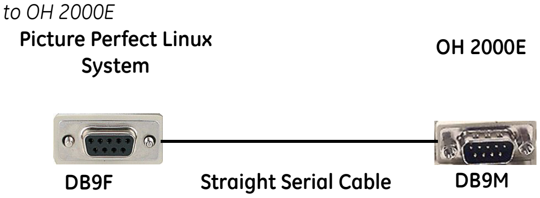


Figure 80. Picture Perfect Linux system to OH 2000E



For the Picture Perfect system:

- Serial ports

AIX

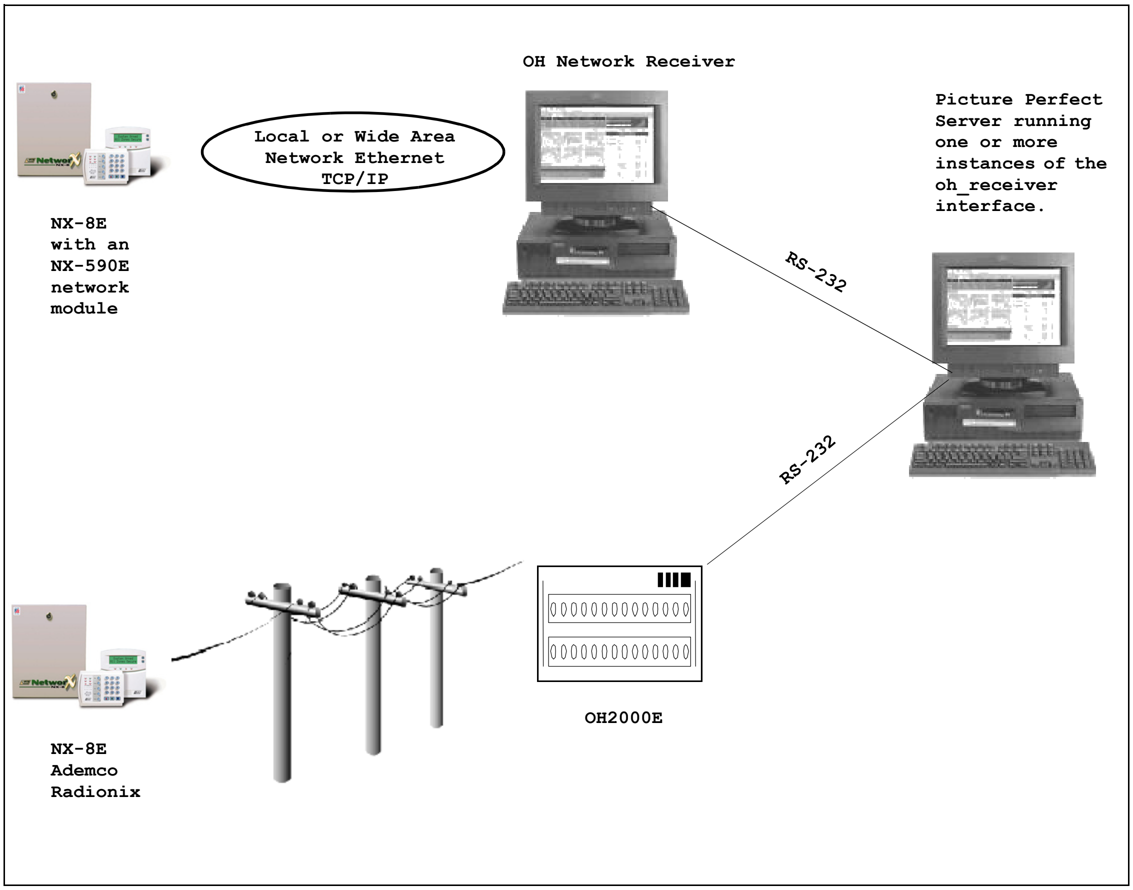
One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the OH Receiver communication program is started.

Figure 81. Overview of the stand-alone Picture Perfect and OH Receiver interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

For the OH Receiver system:

- OH Network system
  - OH Network Receiver
  - NX-8E panel
- OH Dial-up system
  - OH2000E Receiver
  - NX-8E, Ademco, or Radionix panel

Note: Any panel that connects to the OH2000E Receiver must transmit using one of the following protocols in order to be recognized by Picture Perfect:

- SIA

- CID
- Radionics Modem2 6112
- Radionics Modem2 8112
- Radionics Modem2 7112
- Radionics Modem2 9112
- Radionics Modem2 7212

For the Picture Perfect system:

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the OH Receiver communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter port. Refer to *Figure 82*, *Figure 83*, or *Figure 84* as appropriate.

Figure 82. Picture Perfect AIX system to splitter

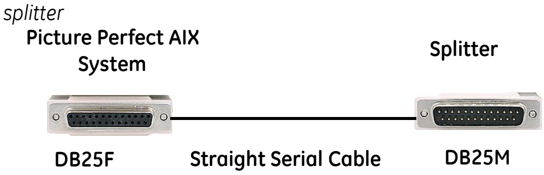


Figure 83. Picture Perfect Linux system with a Digi Port expander to splitter

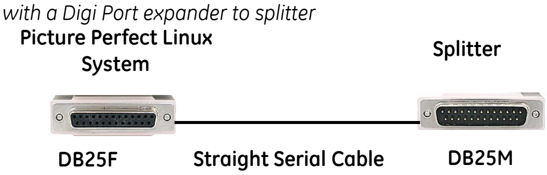
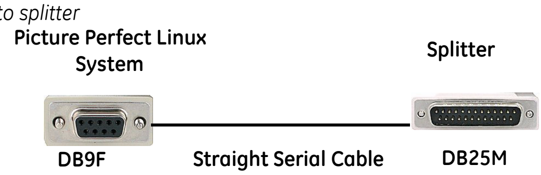


Figure 84. Picture Perfect Linux system to splitter



- Serial Line cable to connect the splitter to the OH Receiver.

Figure 85. Cable pinouts: Splitter to OH Network Receiver

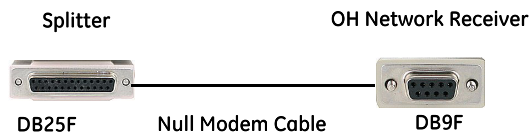


Figure 86. Cable pinouts: Splitter to OH 2000E

Figure 87. Overview of the cable configuration using a splitter

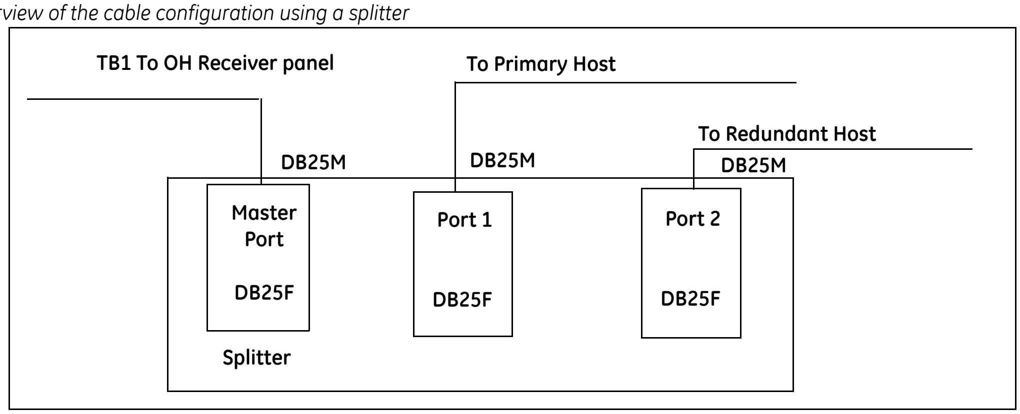
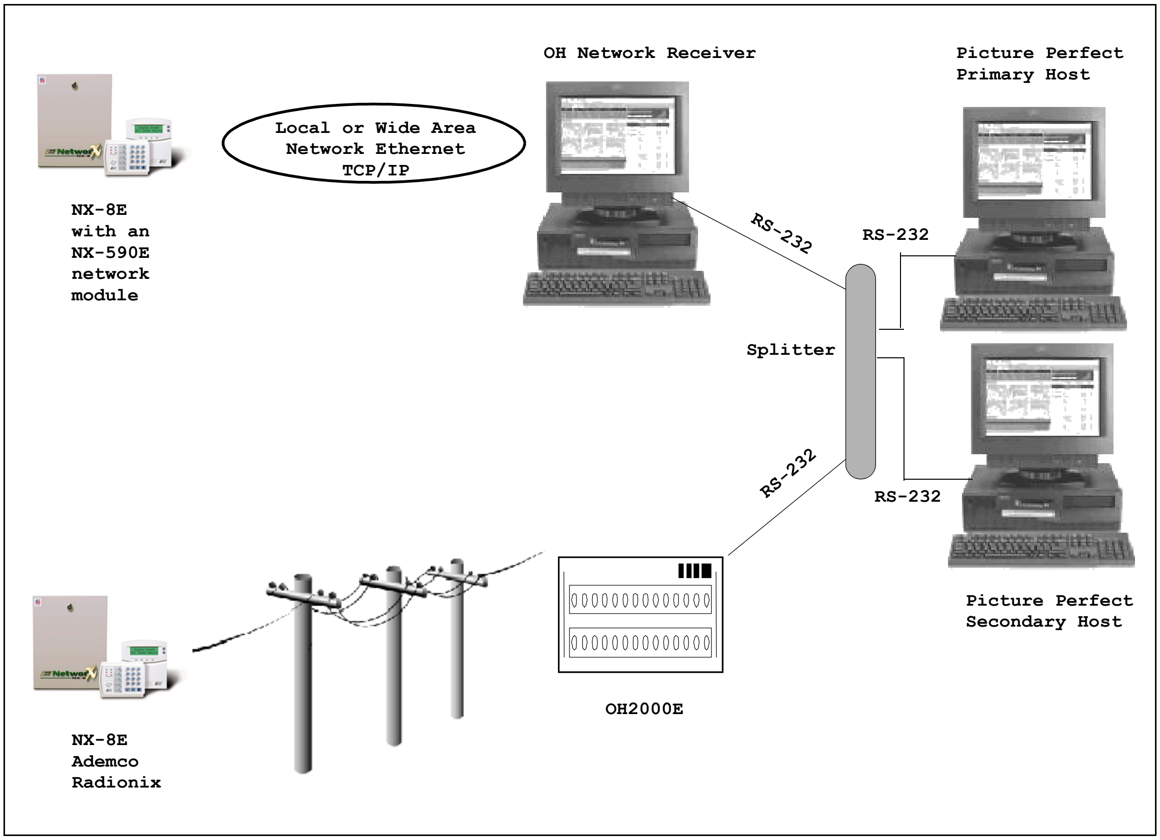


Figure 88. Overview of the redundant Picture Perfect and OH Receiver interface



Configuration

The OH Receiver interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. The message types and formats used by the OH Receiver interface are discussed in the following section. These messages must be configured on the Picture Perfect system.

For a successful configuration, follow these steps, which will be detailed in the sections that follow:

1. Add or modify input group records
2. Add or modify alarm records
3. Add or modify output group records and output records, if desired
4. Monitor alarms

Note: If the OH Receiver package is installed in a Redundant Picture Perfect environment, all operations should be performed on the current primary machine. The normal operation of the redundant Picture Perfect system will sweep any database changes made over to the backup machine.

Input group records

The input group record description field is the key to identifying specific OH Receiver messages. There are two methods of adding input group records, automatic or manual. During installation you are prompted to choose whether you want the system to automatically assign default records, or if you want to manually create them. If you choose the default, which is automatic, the system will create generic input group records to identify the specific message types coming from the panel for a specific device type.

If you choose to manually create them, a specific format must be followed for the description, due to the numerous device types, statuses and possible locations. The specific format allows the interface to look for matches in the database using the input group description field. The format is as follows:

```
OH-R(Receiver) L(Line) P(Partition) Account Event+Zone/User
```

For example, the following input group description defines an event message on Receiver 01, Line 01, for Account 001000, indicating a Panic Alarm by User 000:

`OH-R01 L01 P01 001000 PA000`

Receiver 01

Line 01

Partition 01

Account 001000

Panic Alarm/User 000

Adding an input group

Follow these steps to add an input group:

Note: The Input Group description must follow the format described in *Input group records* on page 250. If you want the alarm message to be more easily identifiable, such as by location, a unique alarm record may be defined for each input group and the alarm record description may be modified to include more descriptive data.See *Alarm records* on page 253.

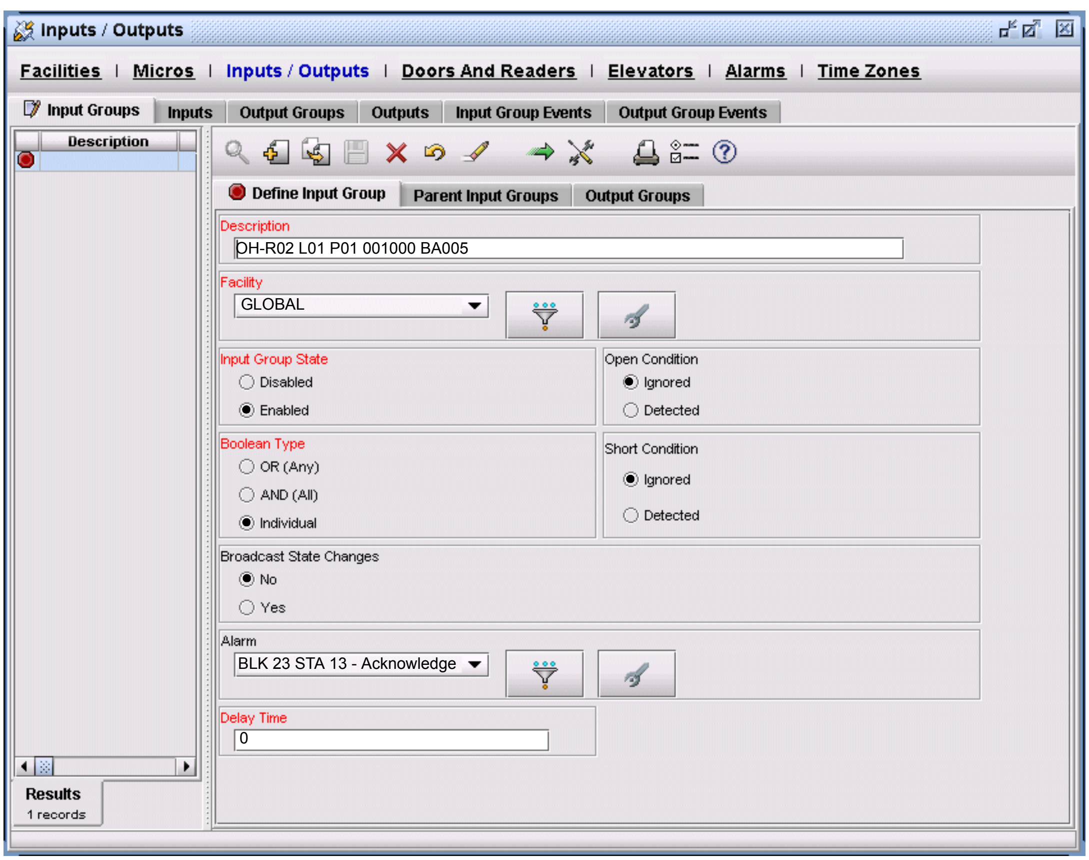
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)

3. Click **Save**.
4. Click **New** to add another input group.

Figure 89. Sample input groups screen



Modifying an input group

Follow these steps to modify an input group:

Note: The Input Group description must follow the format described in *Input group records* on page 250. If you want the alarm message to be more easily identifiable, such as by location, a unique alarm record may be defined for each input group and the alarm record description may be modified to include more descriptive data.See *Alarm records* on page 253.

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Alarm records

During installation you are prompted to choose whether you want the system to automatically assign default records, or if you want to manually create them. If you choose the default, which is automatic, the system will create generic alarm records to identify the specific message types coming from the panel for a specific device type and they will be linked to the corresponding input group records.

If you choose to manually create them, each OH Receiver input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded by Alarm History. The linking is done through the Input Group form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the OH Receiver interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the Alarm Monitor.

For example, a PANIC ALARM might appear on the Alarm Monitor as follows:

```
50   OH-Y PA PANIC ALARM           OH-R01 L01 P01 001000 PA000     Alarm     N/A        01/14/03 15:
```

The alarm record description field can be used to further identify or describe the OH Receiver input group it is going to be linked to. Several input group records can be linked to the same alarm, for example to a generic PANIC ALARM. It may be prudent to set up one alarm record for each input group record(s) that has the same line, description, and account #. The description field has no restrictions or required format since all the unique information for a message type is located in the input group description. If there are similar alarm descriptions that apply to unique devices, then separate alarm records and input group records can be created for each unique device to be recognized.

For example, if you modify the description in alarm record, OH-Y PA PANIC ALARM, to read OH-Y PA Panic Bldg. 1 Lobby, the display will appear as follows:

```
50   OH-Y PA Panic Bldg.1 Lobby    OH-R01 L01 P01 001000 PA000     Alarm     N/A        01/15/03 15:16   Ac
```

The alarm routing should be set up to according to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select NONE from the Set Alarm Routing picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

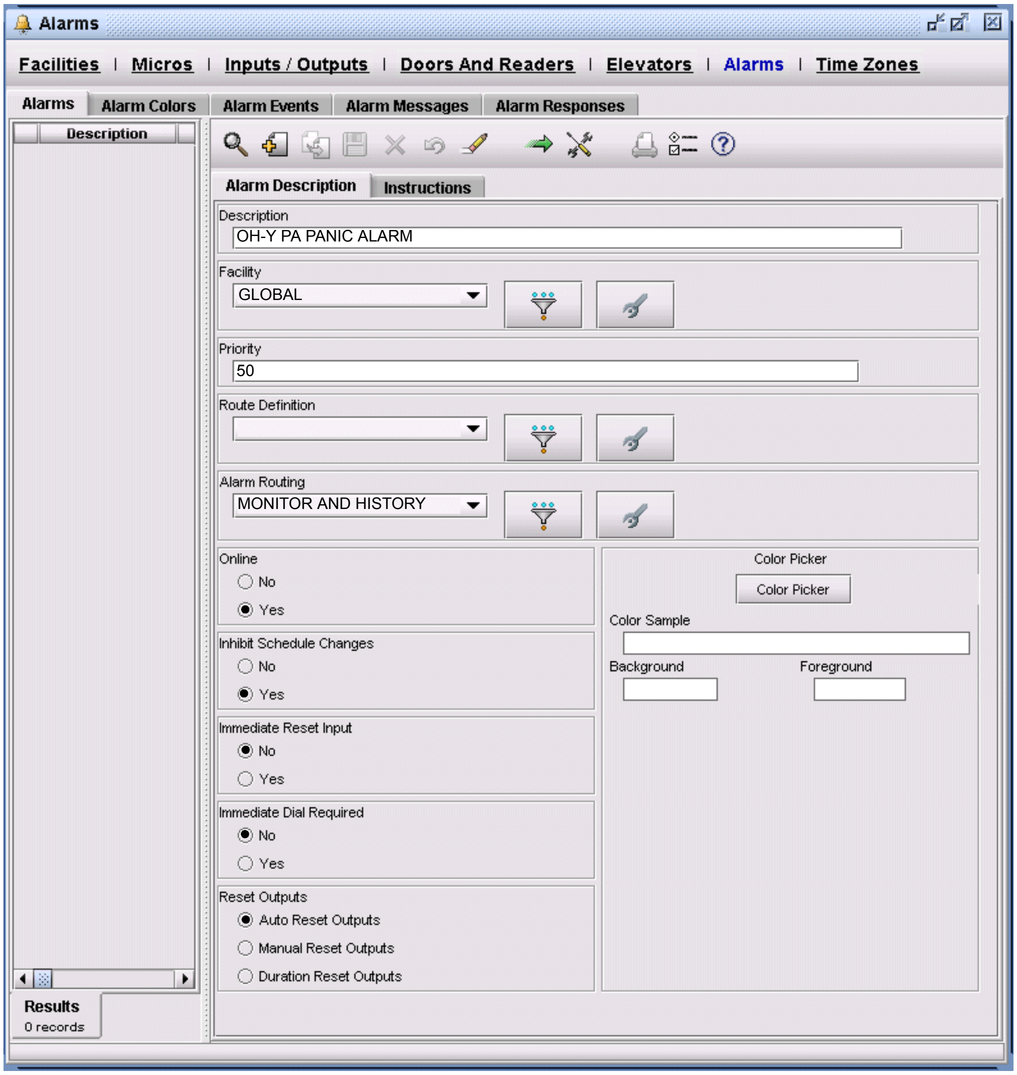
Online	Yes
Reset Outputs	Auto Reset Outputs

   Set the priority, alarm routing, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the monitor for an alarm to show up on the Alarm Monitor.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 90. Sample alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Output group and output records

If you would like to trigger an output, i.e., door strikes, lights or sirens, when OH Receiver messages are received, you will need to configure an output group and a output. The output group must be linked to the input group for the OH Receiver message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the Outputs forms may not apply since this is a one way communication between the OH Receiver and Picture Perfect.

Note: Configuring output groups and outputs is optional.

Monitoring alarms

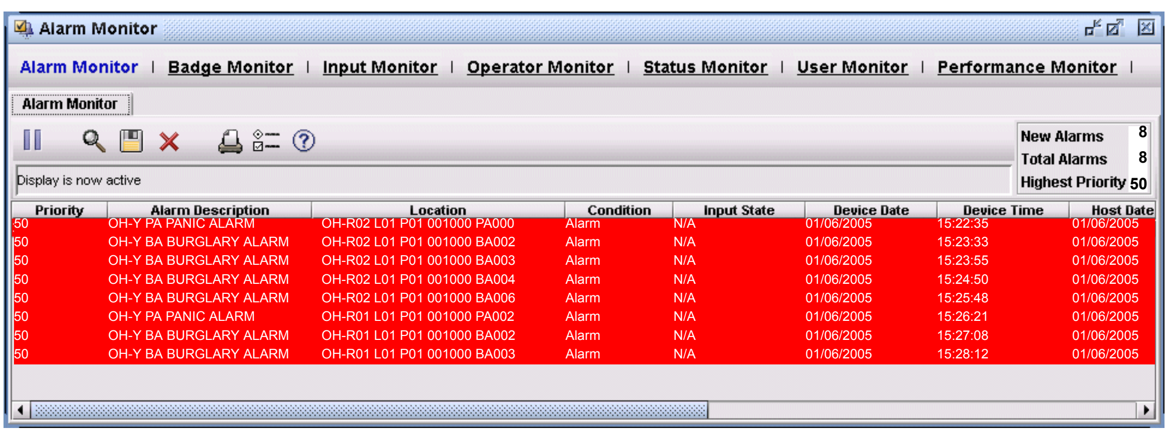
You are now finished with the basic configuration of the OH Receiver package. The OH Receiver messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell the receiver, line, partition, and account of the reported alarm. The complete message of the alarm should be read from the OH Receiver or from a printer hooked up to that panel.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the OH Receiver panel since this is a one way communication.

All messages recognized by the OH Receiver interface will show a condition of Alarm and an Input State of N/A. As with other Picture Perfect alarms that come into the Alarm Monitor the Count column will increment for those alarms that have come in multiple times. The only way to remove OH Receiver alarms from the Alarm Monitor is to use the remove button to remove all alarms or to respond and remove them individually. The time displayed in the Alarm Monitor is the time that Picture Perfect maintains and not the time from the OH Receiver.

Figure 91. Sample alarm monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system that uses OH Receiver 02 and has appropriate input group/alarm records to recognize the conditions coming from the receiver. Below is a line by line explanation.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created. The Location column corresponds to the description field of the appropriate input group record which was created.

Line 1: A panic alarm message was sent from OH Receiver 02 on Line 1 from zone 001.

Lines 2: A burglary alarm message was sent from OH Receiver 02 on Line 1 from zone 002.

Lines 3: A burglary alarm message was sent from OH Receiver 02 on Line 1 from zone 003.

Lines 4: A burglary alarm message was sent from OH Receiver 02 on Line 1 from zone 004.

Lines 5: A burglary alarm message was sent from OH Receiver 02 on Line 1 from zone 006.

Line 6: A panic alarm message was sent from OH Receiver 01 on Line 1 from zone 001.

Lines 7: A burglary alarm message was sent from OH Receiver 01 on Line 1 from zone 002.

Lines 8: A burglary alarm message was sent from OH Receiver 01 on Line 1 from zone 003.

Monitoring events

The Event Monitor displays the armed/disarmed, open/close type messages. The priority, description and the date and time of the occurrence of the event is displayed in priority order. Messages of the same priority are sorted by Date/Time with the oldest at the top.

If a record appears on the event monitor, the panel described is disarmed (Open). If no records are displayed, all panels are armed (Closed).

Testing the interface

Once the input groups and alarm database records have been set up and the interface is running it should be tested to make sure messages are being correctly recognized by the interface.

Extended configuration

The OH Receiver interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/oh_receiver_ttyN.cfg
/cas/db/text/oh_receiver.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/oh_receiver_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the OH Receiver device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. The OH Receiver interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for an OH Receiver device attached to port `/dev/tty5`:
`/cas/db/text/oh_receiver_tty5.cfg`

```
#
#             oh_receiver_tty5.cfg
#             Copyright (C) 1995-2003 GE Interlogix, Inc.
#              All Rights Reserved.
# This file generated from the following installation script.
#
# oh_receiver.inst 1.4 06/09/03
#
# This file contains the configuration information for the OH Receiver
# Alarm Interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from.
#
# These values are setup at installation, and are permanent!
# DO NOT touch these lines.
#
#
# The following values are setup based on your installation responses.
#
PortName                          /dev/tty5
PortBaud                          9600
CharacterSize                     7
Parity                            n
StopBits                          1
Xon                               n
Xoff                              n
Icanon                            y
CreateAlarm                       y
ReceiverNumber                    1
```

/cas/db/text/oh_receiver.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the OH Receiver redundant configuration file: `/cas/db/text/oh_receiver.redundant.cfg`

```
#
#             oh_receiver.redundant.cfg 1.4
#             Copyright (C) 2002-2003 GE Interlogix, Inc.
#             All Rights Reserved.
# oh_receiver.redundant.cfg 1.4 06/09/03
#
# This file contains the configuration information for the OH Receiver
# interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
```

```
RedundantOper                  Y
RedundantHosts                 primary1,backup1
```

Interface data file backup and restore

The OH Receiver interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 15, OH Receiver Interface Data Files*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The OH Receiver software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the OH Receiver interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 15. OH Receiver Interface Data Files

Data file name	Description
`/cas/db/text/oh_receiver_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/oh_receiver.redundant.cfg`	OH Receiver redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix J Configuring a Siebe CBAS interface

This appendix provides information on configuring the Siebe Environmental Control's Facility Integrator (CBAS) interface to Picture Perfect which acts as a secondary monitoring system for the Facility Integrator.

In this appendix:

Introduction

The Siebe Environmental Control's Facility Integrator (CBAS) interface to Picture Perfect acts as a secondary monitoring system for the Facility Integrator and recognizes only 'alarm' and 'dismissed' message types sent from the Facility Integrator as described in the *Engineer's Guide: Building the FI Database Revision A, Part Number MAN-FIEG*. All other messages are ignored.

The Picture Perfect Alarm Monitor may be used to monitor messages from the Facility Integrator. 'Alarm' messages generate entries in the Alarm Monitor containing the prefix (CBAS), the alarm ID, the time value from the message and the alarm type keyword (ALARM, ALMHI or ALMLO) and as much of the alarm description as can be held in the Alarm Monitor's description string. Further message information should be obtained from the primary monitoring device which is the Facility Integrator and its associated printer. 'Dismissed' messages cause the matching Alarm Monitor entry to be reset.

The Facility Integrator Computer Is A PC-based Platform. Communication With The Picture Perfect host is using a serial line connection using the PC's serial port. The communication is uni-directional, meaning the interface only receives data from the Facility Integrator and does not send anything back.

During installation, 40 to 200 database slots are reserved in the Picture Perfect Informix `input_group` and `alarm` tables. These represent the number of Facility Integrator alarms (of those that Picture Perfect handles), that can be simultaneously displayed on the Alarm Monitor. The input group and alarm descriptions are generated dynamically from the information extracted from the Facility Integrator's message. When the number of reserved slots are used up, the next unique alarm will overwrite the oldest alarm.

Redundant systems

The CBAS interface to Picture Perfect supports operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single Facility Integrator. Connectivity is achieved using a splitter between the Picture Perfect system and the Facility Integrator. This allows the physical connection of the Facility Integrator to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the CBAS interface software executes on both Picture Perfect hosts and both receive alarm notifications from the Facility Integrator. However, only the interface software executing on the primary host updates the Picture Perfect database. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are kept track of, but do not update the Picture Perfect database. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then update the database when the alarms are processed.

Software requirements

The software requirements for the Seibe CBAS system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Siebe Environmental Control Interface (`cbas`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect Siebe Environmental Control Interface (`cbas`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Facility Integrator system, provided by Siebe CBAS.

  Refer to your CBAS manual for dip switch settings. Use the default settings.

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the CBAS communication program is started.

- Null modem cable to connect the Picture Perfect system and the Facility Integrator.

Figure 92. Cable pinouts: Picture Perfect system to Facility Integrator (DB25F to DB9F)

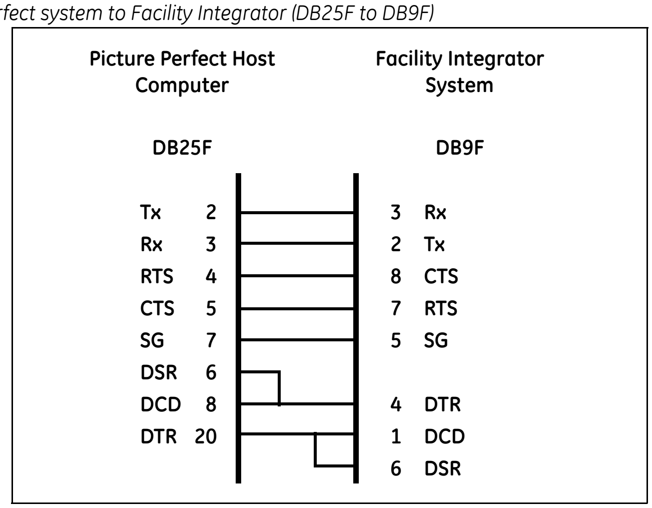
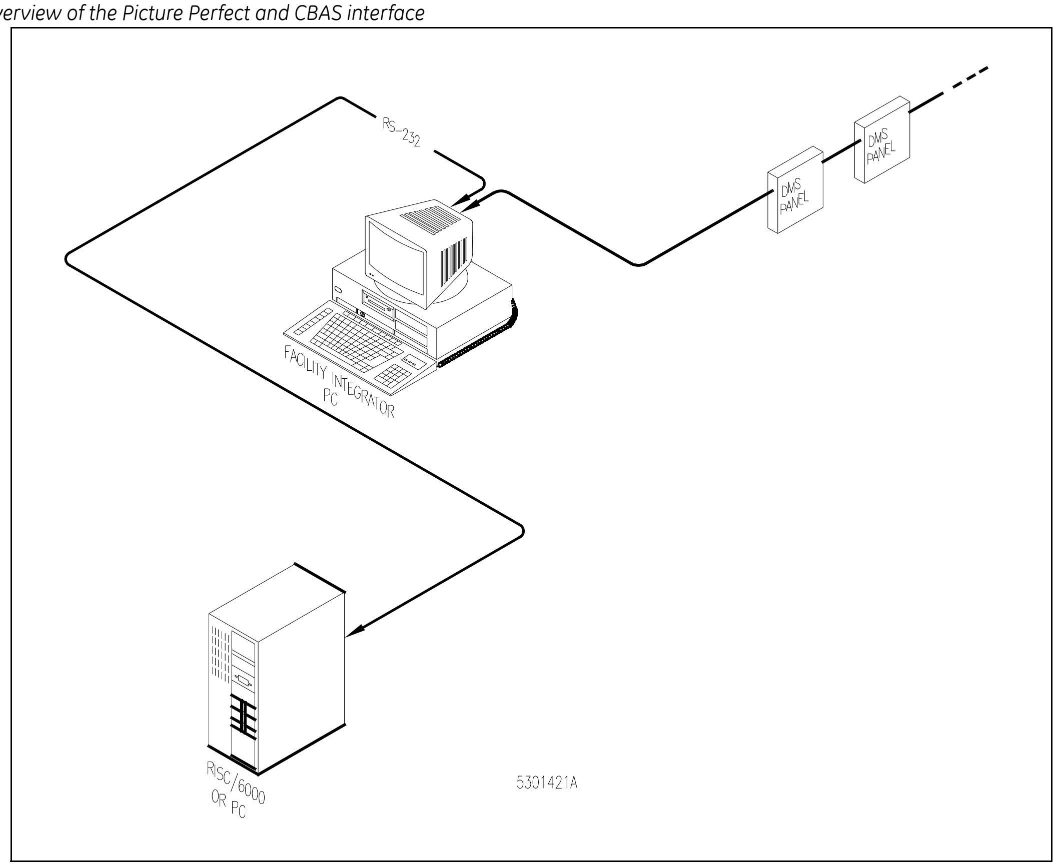


Figure 93. Overview of the Picture Perfect and CBAS interface



Redundant system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Facility Integrator system, provided by Siebe CBAS.

Refer to your CBAS manual for dip switch settings. Use the default settings.

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

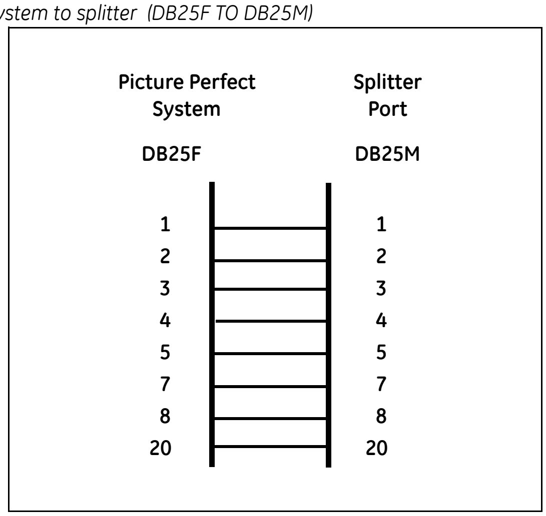
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the CBAS communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 94*.

Figure 94. Cable pinouts: Picture Perfect system to splitter (DB25F TO DB25M)



- Null modem cable to connect from the splitter master port to the Facility Integrator PC's serial port (See figure below).

Figure 95. Cable pinouts: splitter to Facility Integrator (DB25M to DB9F)

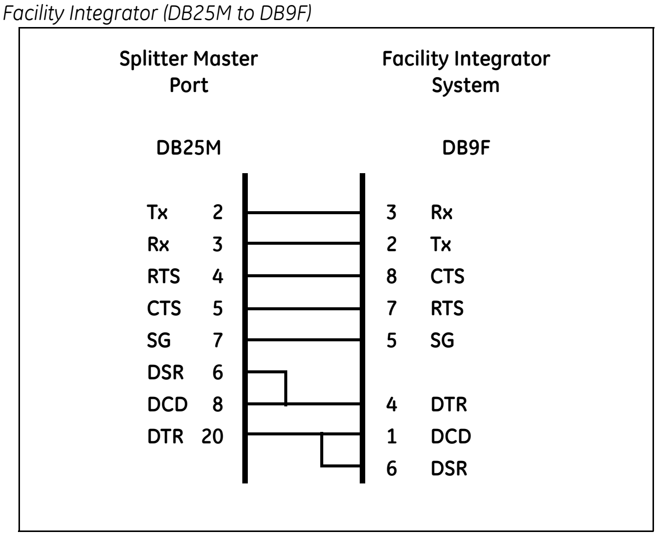


Figure 96. Overview of the cable configuration using a splitter

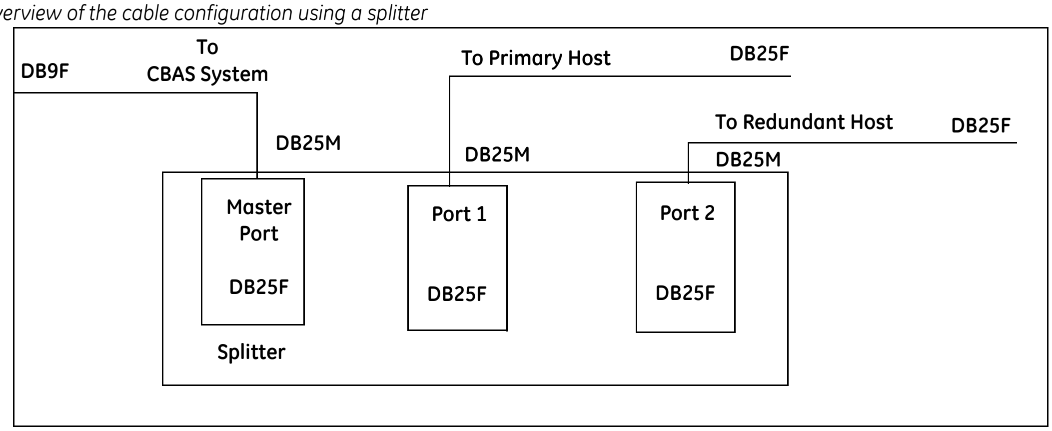
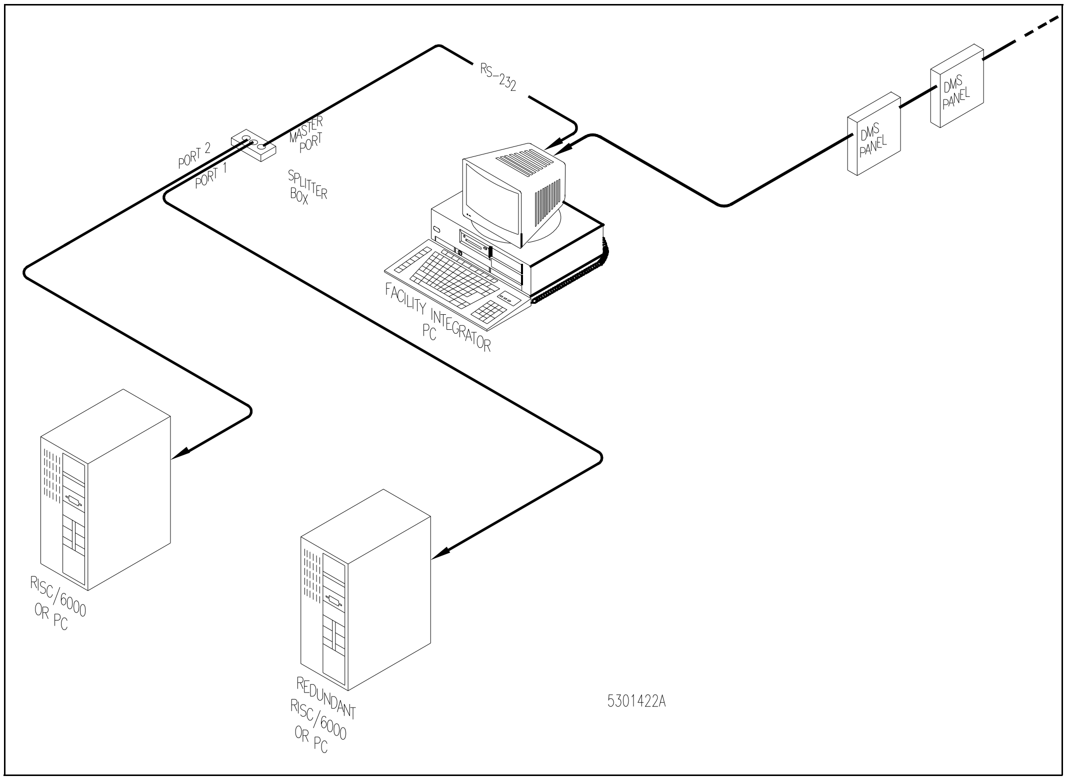


Figure 97. Overview of the redundant Picture Perfect and CBAS interface



Extended configuration

The CBAS system supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/cbas_ttyN.cfg
/cas/db/text/cbas.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/cbas_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the CBAS device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. The CBAS interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a CBAS device attached to port `/dev/tty5`:

```
/cas/db/text/cbas_tty5.cfg
#
#cbas_tty5.cfg
#             Copyright (C) 1996-2003 GE Interlogix, Inc.
#              All Rights Reserved.
# This file generated from the following installation script.
#
# cbas.inst 1.5 05/28/03
#
# This file contains the configuration information for the CBAS Alarm
# Interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from. It also contains the unique input group prefix
# that the interface will use to recognize specific alarm database
# records.
#
# These values are setup at installation, and are permanent!
# DO NOT touch these lines.
#
InpGrpPrefix                      CBAS
NumberOfDatabaseSlots             200
FirstInputGroupNumber             1950
FirstAlarmNumber                  1920
#
# The following values are setup based on your installation responses.
#
PortName                          /dev/tty5
PortBaud                          9600
CharacterSize                     8
Parity                            n
StopBits                          1
```

```
Xon                                n
Xoff                               n
```

/cas/db/text/cbas.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the CBAS redundant configuration file: `/cas/db/text/cbas.redundant.cfg`

```
#
#                  cbas.redundant.cfg 1.11
#                  Copyright (C) 1997-2003 GE Interlogix, Inc.
                   # All Rights Reserved.
# cbas.redundant.cfg 1.4 05/28/03
#
# This file contains the configuration information for the Siebe
# Environmental Control's Facility Integrator (CBAS) Interface for
# redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper                      Y
RedundantHosts                     primary1,backup1
```

Interface data file backup and restore

The CBAS interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 16, CBAS interface data files*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The CBAS software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the CBAS interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 16. CBAS interface data files

Data file name	Description
/cas/db/text/cbas_*.cfg	TTY port extended configuration definition files (* is the port name, for example, tty1 for AIX, ttyD001 for Linux).
/cas/db/text/cbas.redundant.cfg	CBAS redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix K Configuring a Remote Alarm Notification interface

This appendix provides information on configuring the RAN package which allows alarms from the Picture Perfect system to be routed to a remote (non Picture Perfect) system. The alarms can then be processed by and responded to, from the remote system.

In this appendix:

Introduction

When the RAN package is installed, alarms from the Picture Perfect system can be routed to a remote (non Picture Perfect) system. The alarms can then be processed by and responded to, from the remote system.

The Picture Perfect and remote systems are connected using an Ethernet network. Both systems use the TCP/IP protocol to communicate with each other. This method of communication guarantees accurate transmission of all data and instant notification of a system that is no longer connected to the network.

Note: RAN only provides the alarm data which can be forwarded to the remote system. You are responsible for the software on the remote system which processes the incoming alarms. Refer to *Advanced configuration* on page 277 for the format of the message provided by Picture Perfect and the format of the message from the remote system for which Picture Perfect is looking.

RAN works with the Picture Perfect stand-alone, networked, or redundant versions. The basic workings of the systems are similar. Refer to *Figure 98, Overview of a standalone Picture Perfect and a RAN interface* on page 272 and *Figure 99, Overview of a redundant Picture Perfect and a RAN interface* on page 272 for a pictorial overview of the systems that are explained in the following paragraphs.

Standalone

In the Picture Perfect stand-alone version, an alarm occurs and is sent to the Picture Perfect system. If the alarm received has a priority that is equal to or higher than the Alarm Priority specified on the Setup/Parameters window (this would be a numerical value equal to or lower), the alarm has to be responded to before the Alarm Delay time (on Setup/Parameters) expires. If the alarm delay time has expired and no one has responded, the alarm is sent to the remote system. For example, the alarm priority specified on the Setup/Parameters window is twenty-five (25). An alarm occurs and is sent to Picture Perfect. This alarm has a priority of ten (10). Since this priority is less than twenty-five (25) which is the alarm priority specified on the Setup/Parameters window, a countdown begins. If the time expires and no one has responded, the alarm is sent to the remote system.

When an alarm has been routed to the remote system, the Alarm Monitor changes the process state of the alarm from Active to Remote. This confirms that the alarm has not been responded to in time and has now been sent to the remote system. When the remote system responds to the alarm, its process state changes to the appropriate value (pending, completed, etc.). Typically, the alarm completes, and when it resets, it is removed from the Alarm Monitor display.

Networked

The networked version of Picture Perfect works in a similar fashion. In the networked Picture Perfect environment, there is one network host connected to many subhosts. When an alarm is received from a subhost, it is routed directly to the network host; that is, the network host Alarm Monitor contains all of the alarms on the system. If all the alarms are to be routed to a single remote system, then the RAN package should be loaded on the network host, and the RAN process flow will be the one described previously for the standalone configuration. If a different remote host will be handling the alarms from each subhost, then each subhost should be loaded with its own copy of the RAN package, and similarly, the RAN process flow will be the one described previously for the standalone configuration.

Redundant

In a redundant configuration, the RAN package executes on both Picture Perfect hosts. Both the primary and backup hosts are connected to the remote system using two ethernet networks; thus, the remote system needs to have two network cards to run in this environment. The RAN subsystem on both hosts produces the alarms, but only the software running on the primary host routes the alarms to the remote system using the primary network. If one of the networks goes down, communication switches to the other network. In the case of a failover, the RAN software on the redundant host takes over the routing of alarms to the remote system.

Note: During installation, RAN may be configured to safeguard against alarm loss during failover. This means, if the redundant host did not receive a response to an alarm sent by the primary host, the redundant host resends the alarm when it takes over as primary.

Software requirements

The software requirements for the Remote Alarm Notification interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect – Remote Alarm Notification interface (`ran`) package

Note: A typical site requires a minimum of 5MB free disk space to install the Picture Perfect RAN software on the IBM RISC System/6000. For specific configuration details, contact your GE Security Sales Representative.

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect – Remote Alarm Notification interface (`ran`) package

Note: A typical site requires a minimum of 5MB free disk space to install the Picture Perfect RAN software on the IBM RISC System/6000. For specific configuration details, contact your GE Security Sales Representative.

Hardware overview

Figure 98. Overview of a standalone Picture Perfect and a RAN interface

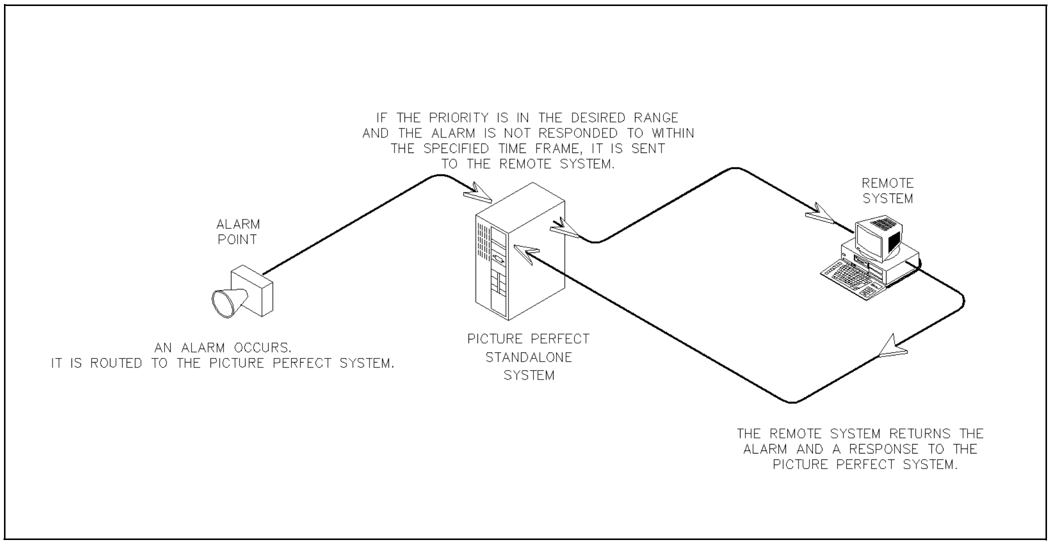
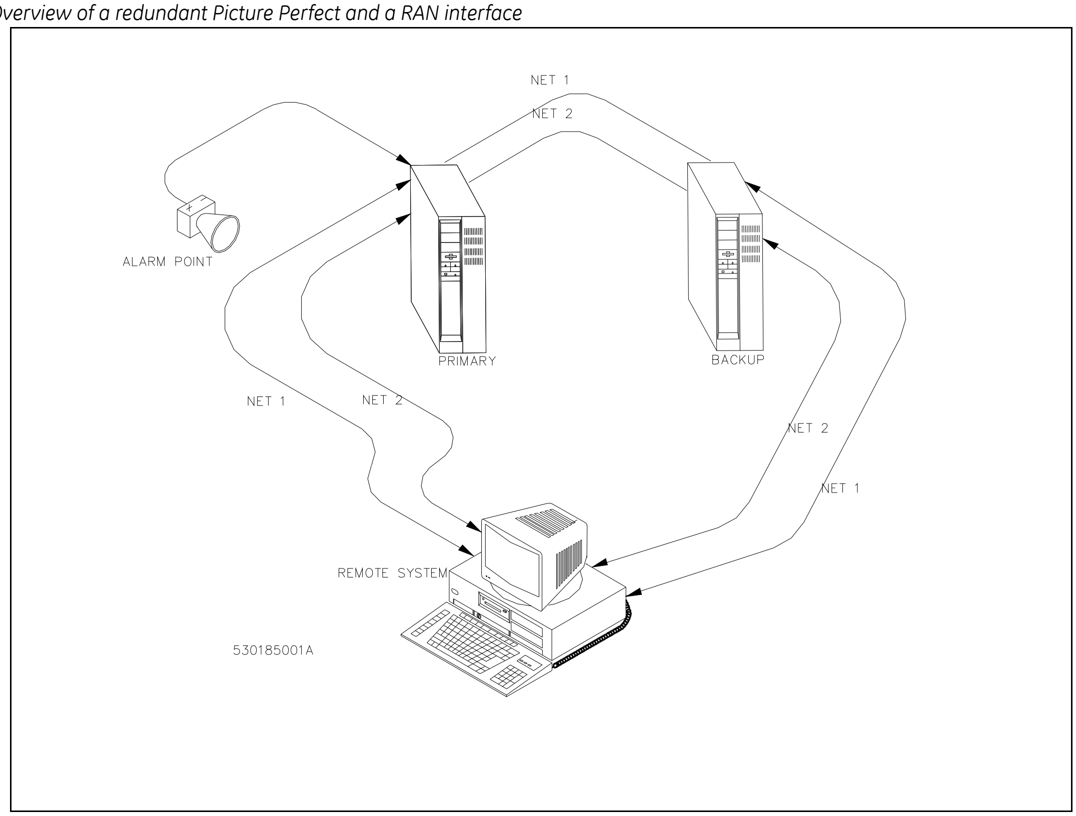


Figure 99. Overview of a redundant Picture Perfect and a RAN interface



Configuration

RAN configuration is composed of many parts due to the nature of the application and network communications. Some considerations for the configuration of the alarms:

- What alarms based on priority should be routed to the remote system.
- What length of time should elapse before unresponded-to alarms should be routed to the remote system.

The file `/cas/db/text/rantcpip.cfg` contains the configuration parameters. These parameters are set during installation and do not need to be changed by the system administrator. For more information, refer to *Advanced configuration* on page 277.

Once the RAN package is installed, you need to configure the system. Only the following are mandatory:

1. Configure the alarm routing criteria. For an alarm to be routed to a remote system, the alarm routing must include routing to the monitor. Use the Configuration/Alarms form to set up the alarm routing.
2. Enter a priority and time delay for alarms sent to a remote system. See *Configuring alarm routing criteria* on page 273.

The steps listed below are optional. All have default parameters that were setup during installation. You can run the RAN system with these defaults or you can change them.

3. Change the alarm descriptions that are displayed when connection is lost with the remote system. See *Remote Connection Lost Alarm* on page 274.
4. Change the length of time the system waits for a connection between the Picture Perfect and remote systems before reporting a connection lost alarm. See *How long to wait for a connection* on page 279.
5. Change the location and the number of alarms that will be buffered while communications are down between Picture Perfect and the remote system. See *What Happens When the Connection is Lost* on page 279.

Configuring alarm routing criteria

Completion of this section is mandatory. You need to set an upper range for alarm priority. For any alarms with a priority equal to or higher than the alarm priority set here (this would be a numerical value equal to or less than this number), a countdown then begins from the number you set as the alarm delay time. If the alarm has not been responded to and the delay time has elapsed, the alarm is sent to the remote system.

Follow these steps to configure alarm priority and delay time:

1. Select **Setup**, then **Parameters**.

   The **Parameters** form displays.
2. Enter the **Alarm Delay** time. This is the number of seconds which must elapse before an unresponded-to alarm is sent to the remote system.
3. Enter the **Alarm Priority**. This is the priority that an alarm must be equal to or lower than before the alarm can be sent to the remote system.
4. Click **Save**.
5. Restart Picture Perfect.

Remote Connection Lost Alarm

During installation, RAN automatically creates a default alarm and input group to be used when communications are lost with the remote system. The alarm description is REMOTE ALARM SYSTEM CONN LOST. The alarm is set up with a priority of 15 and a routing to both the Alarm Monitor and history. The input group used for this alarm has a description of REMOTE ALARM NOTIFICATION HOST. However, you may want to modify the alarm and input group to provide a more site specific description of the alarm condition.

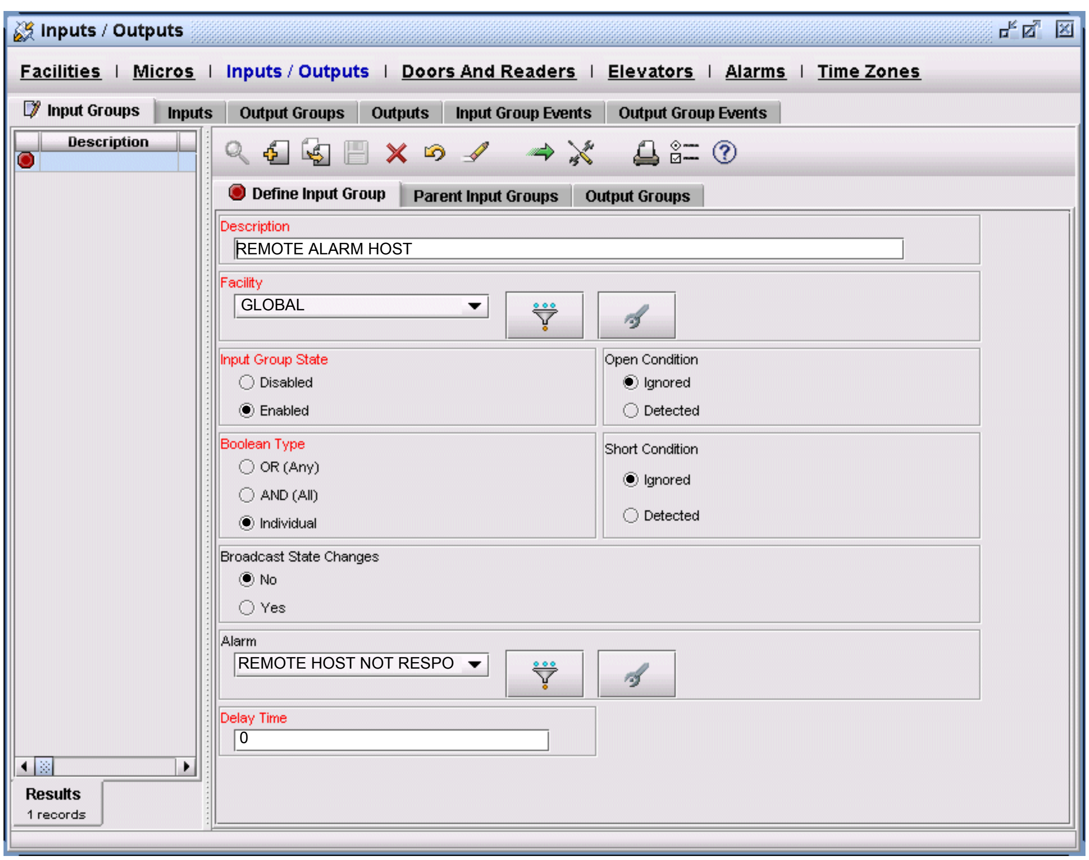
Follow these steps to modify the input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. In the **Description** field of the **Input Groups** form, enter **REMOTE*** as the search criteria**.**
3. Click **Find**.

   At least two input group entries will be found. Locate the **REMOTE ALARM NOTIFICATION HOST** input group in the grid.
4. Edit the input group **Description** field.

Note: The input group description, or location, displays as the Description on the Alarm Monitor form. Therefore, you may want to enter a more specific description, such as the actual remote alarm system's name, such as "REMOTE RAN HOST - <hostname>". DO NOT edit any other field on this form; most fields are ignored but others can prevent the alarm from occurring. The initial settings are shown in *Figure 100*.

Figure 100.Input groups form



5. When completed, save the description by clicking **Save**.

Follow these steps to modify the alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** form, enter **REMOTE*** as the search criteria**.**
3. Click **Find**.

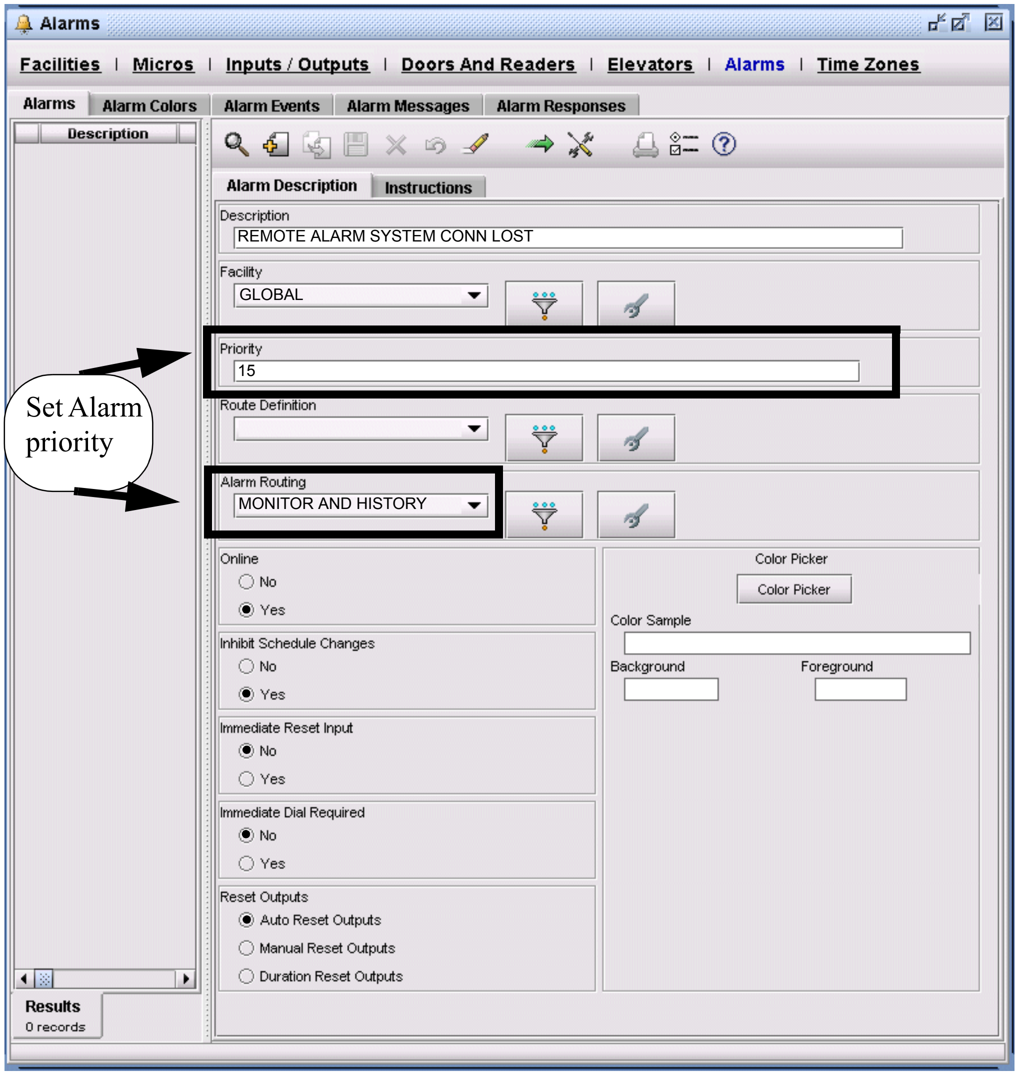
   Result: At least two alarm entries will be found. Locate the **REMOTE ALARM SYSTEM CONN LOST** alarm in the grid.
4. Edit the **Alarm Description** field.

   Note: This alarm description displays in the Alarm Description column on the Alarm Monitor form. Therefore, you may want to enter a specific alarm description.
5. Modify the **Alarm Priority** to an appropriate level. (Refer to *Figure 101, Alarms forms* on page 276 as an example.)

   Note: If the priority is equal to or higher than the RAN alarm priority (this would be a numerical value equal to or lower) and was not responded to within the time specified in the Alarm Delay field on the Control/Parameters form, this alarm is sent to the remote system when communications are restored.
6. Modify the **Alarm Routing** to meet your requirements. (Refer to *Figure 101* as an example.)

   Note: The alarm must at least be routed to MONITOR.
7. Attach any instructions you want to the alarm.
8. When completed, save the alarm by clicking **Save**.

Figure 101.Alarms forms



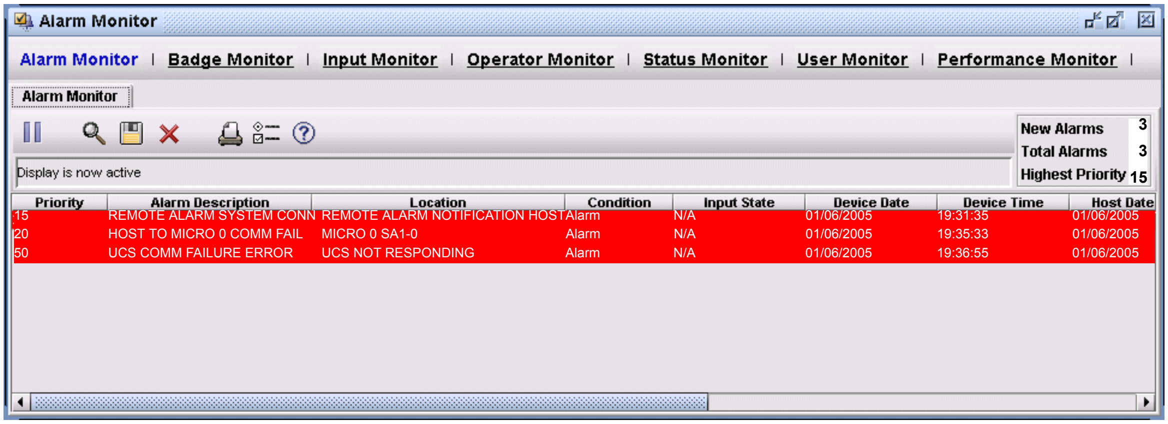
You are now finished with the basic configuration of the RAN package.

It is important to note that in a network Picture Perfect environment, when communications are lost with the remote system, someone must be monitoring the alarms on the network host. If no terminals are configured to receive alarms or no one is monitoring alarms when communications are interrupted, the break in communications will go undetected. This would impact the operator monitoring the remote system terminals who may not be aware that alarms are not being routed to that system. The lost connection alarm should be routed to a constantly monitored system where the appropriate personnel can be informed immediately.

When the lost connection alarm is displayed on the Alarm Monitor, it displays the Alarm Description and Location from the data just modified above. The Condition of the alarm will be either Alarm or Reset, and the Input State is always N/A. Refer to *Standalone* on page 270 for a discussion of alarm priorities and parameters. The process state changes from Alarm or Reset state to Remote when forwarded.

A sample Alarm Monitor form displays in *Figure 101*.

Figure 102.Alarm monitor form



Advanced configuration

The RAN system supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the `/cas/db/text/rantcpip.cfg` file. This file consists of a series of text lines, each containing a variable name followed by a value or setting.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change this file, you must be knowledgeable about text edit

The following is the contents of the `rantcpip.cfg` file:

```
#                               rantcpip.cfg.1.8
#
#                  Copyright (C) 1992-2003 GE Interlogix,Inc.
#                               All Rights Reserved.
#
# @ (#) rantcpip.cfg 1.8 06/10/03
#
#
# This file contains the configuration information for the RAN TCP/IP
# service. All information is divided into two sections, "configuration
# item label", and the desired setting. True/False labels can be
# answered with either {TRUE | FALSE | YES | NO }.
#
# RemoteConnResetReqd ::   is a Yes/No Value. If set to yes then the loss
#                          of remote system connection alarm cannot be removed
#                          until the connection is re-established.
#
# RemoteConnColdTO ::      sets the number of seconds after startup that, if the
#                          remote connection is still not established, it will
#                          generate the remote system connection lost alarm (0
#                          means wait forever).
#
# RemoteConnWarmTO ::      sets the number of seconds to wait after a remote
#                          connection is lost, before an alarm is generated. If the
#                          remote system reconnects before the specified number of
#                          seconds elapses, then no alarm is reported.
#
# ReplyToAlarmTO ::        sets the number of seconds in which the remote host
#                          must reply to the alarm message, or a non-response from
```

```
#                          remote host alarm will be generated. Change this value
#                          to '0' (zero) below, if the remote host will not be
#                          responding.
#
# PipeName, and PipeSize ::specifies the alarm storage file used when
#                          the remote system connection is broken. RAN will
#                          buffer the alarms up to PipeSize alarms in the
#                          PipeName file.
#
# RANRedundant ::          indicates whether or not RAN is running in a redundant
#                          environment.
#
# AlarmLossChk ::          indicates whether or not to prevent alarm loss. i.e.
#                          resend the last alarm if a network loss occurred before
#                          the acknowledgement was received from the remote
#                          system.
#                          NOTE: A lack of response when a nonzeroReplyToAlarmTO
#                          time expires, is regarded as a connection loss situation.
#
# MaxBindRetries ::        number of times to retry a socket reconnection before
#                          exiting.
#
# AlarmDisposition ::      type of response to send to tps in response to the
#                          reply received from the remote system.
#                                 PENDING - Equivalent of pressing 'OK' on the
#                                 monitor.
                                  DISPOSE - Equivalent of pressing 'Remove' on the
#                                 monitor. If is a set alarm, goes to
#                                 'Completed' state. If immediate reset, or already
#                                 received the reset, then it is removed from the
#                                 monitor.
#                                 PURGED - Equivalent of pressing 'Purge'
#                                 on the monitor. Removes the alarm from the
#                                 monitor, regardless of state.
#
RemoteConnResetReqd        Yes
RemoteConnColdTO           60
RemoteConnWarmTO           10
ReplyToAlarmTO             5
PipeName                   /tmp/CAD_pipe
PipeSize                   100
RANRedundant               No
AlarmLossChk               Yes

#
# The following values should only be adjusted by qualified GE Interlogix - CASI
# Support personnel.
#
MaxBindRetries             120
AlarmDisposition           DISPOSE

#
#                    These values are setup at installation, and are permanent!
# DO NOT touch these lines.
#
RemoteConnAlarm            33778
RemoteConnInGrp            33778
ReplyToAlarm               33779
ReplyToIngrp               33779
```

Variables that require a **yes** or **no** setting take either **yes**, **no**, **true**, or **false**. Any line that begins with the pound symbol (#) or a space is a comment line and is not construed as a variable setting. To modify the settings of any

of these variables, you need to edit the `/cas/db/text/rantcpip.cfg` file with an editor such as `vi`.

The permissions on this file are read/write for the super-user, and read-only for all other users. This means that only the super-user has authorization to modify this file.

Note: Any time a variable in rantcpip.cfg is changed, the RAN interface must be restarted by shutting down and restarting Picture Perfect.

How long to wait for a connection

Because the connection between Picture Perfect and the remote system is over a network that utilizes TCP/IP, each system immediately knows if the connection between them has been broken for any number of reasons. RAN provides for two separate timers that are used in detecting a lost connection alarm. The first timer variable, called the RemoteConnColdTO, is used when the RAN system is started with Picture Perfect. During startup, there is no connection with the remote system. Expect the connection to take some time to be established. If the timer expires and a connection with the remote system has still not been made, a lost connection alarm is generated. The default value for the cold timer is 60 seconds.

The second timer variable is called RemoteConnWarmTO. It is used when the system has already been connected to the remote system. When the connection is lost to the remote system, this timer is started. If the timer expires and there is still no connection, the lost connection alarm generates. The default value for the warm timer is 10 seconds. This allows for a momentary glitch in communications as long as the communications are restored within 10 seconds. If any glitch in communications is not acceptable, then this timer can be set to 0 seconds for immediate reporting of a lost connection alarm.

Options for CONN lost alarms

No matter how the lost connection alarm was issued, when one occurs it reports with the input state set to alarm. The lost connection alarm can be equated to an input point alarm. It has two states: ALARM and RESET. The RESET condition occurs when the connection to the remote system is established. Based on the requirements at your site, it is possible to enforce that the lost connection alarm must be in a RESET state (communications with the remote system are OK), before the alarm can be cleared from the activity monitors. This behavior is controlled through the RemoteConnResetReqd variable. If RemoteConnResetReqd is set to Yes, then the alarm must be reset before it can be cleared.

Remember that the Remove button can be used to remove all alarms regardless of their state. However, if the Remove Alarm Only If Reset option is selected on the Setup/Parameter window, only alarms in reset state may be removed.

What Happens When the Connection is Lost

The moment that communications are disrupted, the alarm that the RAN system might have been trying to send to the remote system is saved in memory. If new alarms are received by RAN to be sent on to the remote system, they are buffered onto the hard disk. As soon as communications with the remote system are restored, the first alarm sent is the alarm in memory that RAN was trying to send when the connection went down. After that alarm is sent, RAN goes to the hard disk and sends all the alarms on a first-in, first-out (FIFO) order to the remote system.

The RAN system may also be configured, at installation time, to safeguard against alarm loss. If the AlarmLossChk configuration parameter is set to Yes, as alarms are processed, new alarms will not be

forwarded to the remote system until a response is received for the alarm that was just sent. The new alarms will be buffered onto the hard disk, into the PipeName file, for a maximum of PipeSize alarms.

The PipeSize variable sets the maximum number of alarms that can be stored on the hard disk. The default number of alarms that the file can hold is 100 alarms. The location of the file used on the hard disk is controlled by the PipeName variable. This variable contains the exact name of the file that is used for buffering the alarms and must be a complete file name with a path. The default value is `/tmp/CAD_pipe`. If you need to increase the number of alarms, you may need to increase the size of `/tmp`. Contact GE Security Customer Support for assistance.

Alarm response states

When the remote system responds to the alarms sent by RAN, these responses are recorded into alarm history. The response from the remote system is treated in the same way as a response from an operator sitting at a Picture Perfect terminal. The response text is provided by the remote system. The process state of the alarm is controlled by the `AlarmDisposition` variable. The following are possible settings for this variable:

Table 17. Possible settings for alarm response states

Settings	Description
PENDING	A response has been made but the alarm has not been reset.
DISPOSE	Removes the alarm if it has been reset, otherwise it is marked as completed.
REMOVE	A response has been made and the alarm has been reset.
PURGED	Logs all alarms and deletes them even if they are not reset.

The default for AlarmDisposition is DISPOSE. DO NOT CHANGE THIS VALUE, unless you are an advanced user.

TCP/IP configuration

Since the RAN system communicates with the remote system using TCP/IP protocol over the Ethernet network, both the RAN and remote systems must know the port number of the RAN service. The port number can be compared to a telephone number. Both the Picture Perfect network host and the remote system must know the number in order to communicate with each other. The default port number assigned at time of installation is 9011. This is recorded in the `/etc/services` file. This file is a “phone book” of network services of which RAN is one entry. The system administrator or network administrator is responsible for making sure that no two services have the same (port) number.

If the RAN 9011 number is already in use by another service, it can be changed to another value by editing the `/etc/services` file. If changed, notify the remote system of the new number.

Note: To support functionality in a redundant environment, RAN utilizes two ports (for the redundant networks). The default port number for the redundant network port, assigned at time of installation is 9012.

Message format from Picture Perfect (Version 1.55 or higher)

The following is the format of the enhanced RAN message sent from Picture Perfect to the remote system (Version 1.5.5 or higher):

```
typedef struct _ecad_send_pkt
{
    int       host_id;
    int       input_id;
    int       alarm_id;
    int       ingrp_id;
    char      host_origin[28];
    Date      happened;
    short     priority;
    char      padding [3]
    char      alarm_description[31];
    char      input_description[31];
    int       process_state;
    char      logical_state[15];
    char      physical_state[15];
} ECadSendPkt;
```

Message format from the remote system

The following is the format of the enhanced RAN message Picture Perfect needs to receive from the remote system:

```
typedef struct _ecad_receive_pkt
{
    ECadSendPkt                     alarm_info;
    char                            remote_sys_info[256];
} ECadReceivePkt;
```

Error messages

The following are the possible error messages that can be posted in the `log.mmdd` files in the `/cas/log` directory, followed by a brief explanation of the possible problem that caused this message. The procedure for handling all these messages is the same. If the solution listed in the description does not eliminate further reporting of the error, you should note the exact text of the error and contact GE Security Customer Support for further assistance. Under normal conditions, you should not see these messages.

abnormal break in main loop

An internal error has occurred. If it persists, restart the Picture Perfect system.

AcceptConnection failed

There was an error encountered while trying to establish a connection with the remote system. Check the connection to the remote system and the files `/etc/services` and `/etc/hosts` on Picture Perfect.

caught signal *xx*

This message indicates that the RAN system has caught an unknown signal and is continuing on.

caught SIGTERM, shutting down

This message indicates that the RAN system was asked to terminate.

client connection lost

This is a normal message that confirms that the connection between the RAN and remote systems has been broken. The lost connection alarm generated after the appropriate timer expires during which the connection was not re-established.

Configuration file is missing *variable_name* parameter.

A mandatory variable is missing from the `/cas/db/text/rantcpip.cfg` file. If you are unable to replace the variable in the file, then re-install the RAN package.

could not PP_smalloc an Alarm message

could not PP_smalloc TPMessage

could not PP_smalloc TPAlarmStateChangeData

could not PP_smalloc remote TPMessage

could not PP_smalloc remote TPAlarmStateChangeData

All these errors indicate an internal system resource has been exceeded. The only way to correct this is to restart the Picture Perfect system.

Could not open pipe *filename,* error = *xx*

RAN is unable to create the alarm pipe file. This is typically the result of an invalid `PipeName` variable.

Error retrieving an alarm from the pipe, errno=*xx*

An error occurred while trying to retrieve an alarm from the hard disk to send to the remote system. Check the file system sizes.

failed to register with the frontend, errno = *xx*

An internal component of RAN is missing. Shutdown and restart the Picture Perfect system.

Failed fetching alarm from frontend, errno = *xx*

An error was encountered while trying to get an alarm from the system to send to the remote system. The alarm was not sent to the remote system.

only received *xx* of *yy*

RAN received only `xx` bytes out the `yy` bytes that it expected to receive. The remote system should re-send any message that caused this error. If these messages persist, there may be a problem with the network.

RAN backend is already installed

The installation has failed and installed two RANs. If the problem remains after restarting Picture Perfect, remove and then re-install the RAN package.

recv error, errno = *xx*

An error was encountered while receiving a response to an alarm from the remote system. The remote system should re-send any message that caused this error. If these messages persist, there may be a problem with the network.

select error, errno = *xx*

An error occurred while attempting to configure the network connection to the remote system.

Server send error, errno = ***xx***

An error occurred while sending an alarm to the remote system. This usually happens when the network connection is lost between the two systems. The alarm re-sends until it is received by the remote system.

Server short send error, ***xx*** **of** ***yy*** **sent**

An error occurred while sending an alarm to the remote system; `xx` bytes out of `yy` were sent. This usually happens when the network connection is lost between the two systems. The message re-sends until it is received by the remote system.

SERVER - Maximum number of BIND attempts exceeded

RAN is having trouble establishing a connection with the remote system. If this message displays repeatedly, try increasing the `MaxBindRetries` variable.

SERVER accept error

This message indicates that the RAN and remote systems are having trouble connecting with one another over the Ethernet network.

SERVER IPC call name failed, errno = ***xx***

An error has occurred while trying to talk on the network. RAN usually recovers by itself with no data being lost.

TPS does not appear to be running

Picture Perfect is not completely running. Shut down and restart Picture Perfect. If this problem persists, call a GE Security Customer Support representative for assistance.

Unable to establish RANTCPIP services.

RAN was unable to establish the necessary requirements for operating on the network. Possible reasons for this can be a bad or missing
`/etc/services` or `/etc/hosts` files.

Unable to open configuration file ***filename*****, errno =** ***xx***

The `/cas/db/text/rantcpip.cfg` is either missing or has the wrong permissions. If this problem persists, re-install RAN.

Unable to store HOST*aa*, INPUT*bb*, ALARM*cc*, INPUT GROUP*dd*
(errno = ***xx*****)**

This message indicates that an error was encountered while attempting to save an alarm on the hard disk. The **host**, **input**, **alarm**, and **input group ID**s are all displayed. Check the file system sizes.

Unable to store HOST*aa*, INPUT*bb*, ALARM*cc*, INPUT GROUP*dd* (pipe full)

This message indicates that RAN tried to save more alarms to the hard disk than it was configured for. The alarm causing this message does not send to the remote system but is shown in the log. If this is a common problem, try increasing the `PipeSize` variable.

Appendix L Configuring a Simplex interface

This appendix provides information on configuring the Simplex 4100 fire alarm system which allows Picture Perfect to act as a secondary monitoring system for the Simplex fire and other life-safety alarms.

In this appendix:

Introduction

The Picture Perfect host access control and alarm monitoring system which interfaces with the Simplex 4100 fire alarm system has been developed to receive specific alarms and resets. The objective of this interface is to allow Picture Perfect to act as a secondary monitoring system for the Simplex fire and other life-safety alarms.

This unique combination is an optional software package, which generates a Picture Perfect alarm when an alarm is tripped or reset on the Simplex panel. The Simplex 4100 sends this data using RS232 serial port to Picture Perfect by uni-directional communication, that is, Picture Perfect will only receive data from Simplex, it will not transmit data to Simplex.

With this interface, the operator can now use the Picture Perfect graphical user features to observe alarm conditions detected by the Simplex system, as opposed to receiving only the standard alarms such as “invalid badge”, “door-held-open”, “door-forced-open” generated by the Picture Perfect system alone.

Redundant systems

The Simplex System interface to Picture Perfect supports operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single Simplex System. Connectivity is achieved using a splitter between the Picture Perfect system and the Simplex System. This allows the physical connection of the Simplex System to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Simplex System interface software executes on both Picture Perfect hosts and both receive alarm notifications from the Simplex System. However, only the interface software executing on the primary host processes the alarms. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the Simplex System.

Software requirements

The software requirements for the firepanel system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Simplex interface (`simplex`) package:

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect Simplex interface (`simplex`) package:

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your *Picture Perfect Installation Manual*:

- Serial ports

AIX

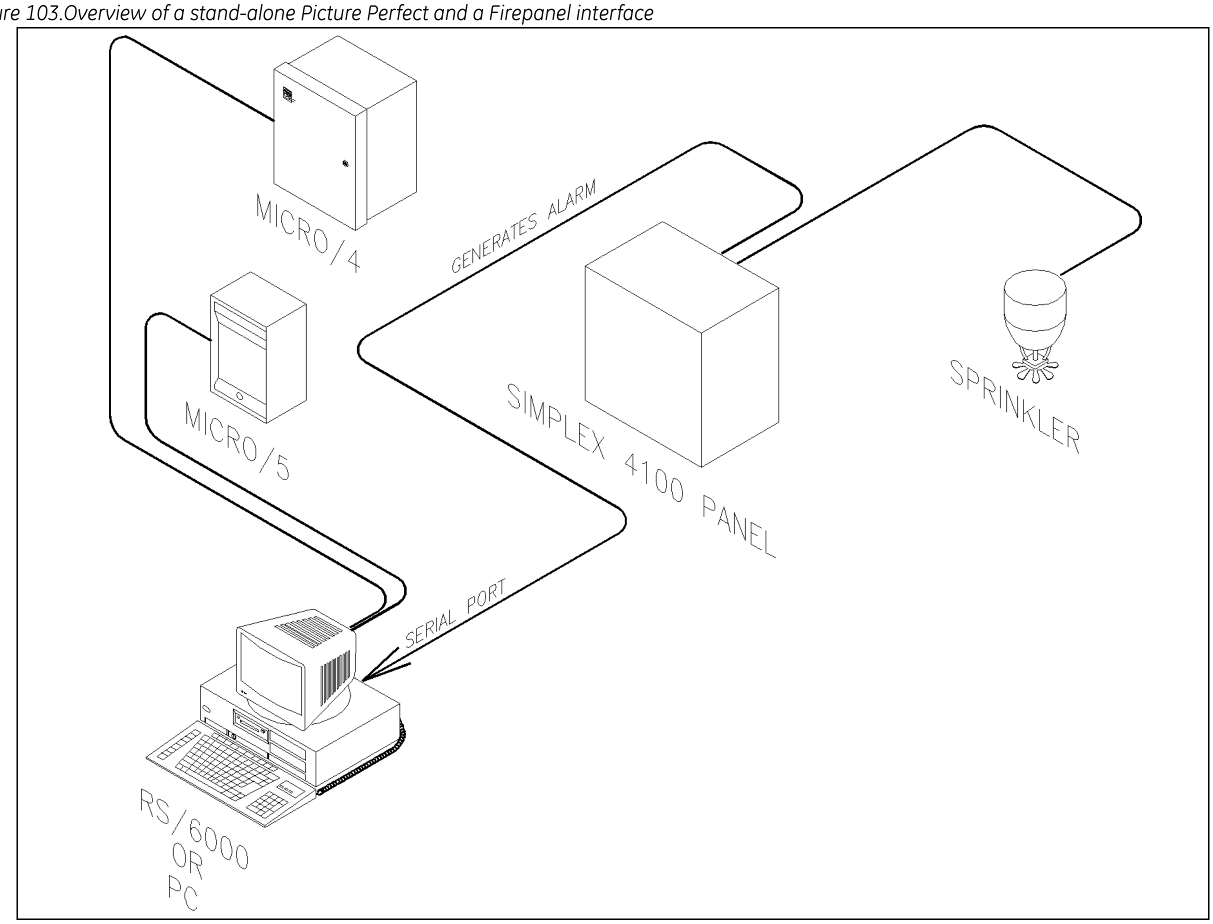
One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Simplex communication program is started.

Figure 103.Overview of a stand-alone Picture Perfect and a Firepanel interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

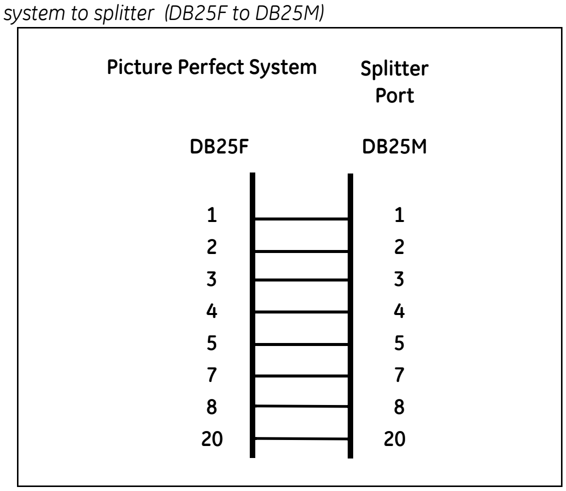
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Simplex communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 104*.

Figure 104.Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect the splitter master port to the standard splitter ports. Refer to *Figure 105*.

Figure 105.Cable pinouts: splitter to switcher (DB25M to DB9M)

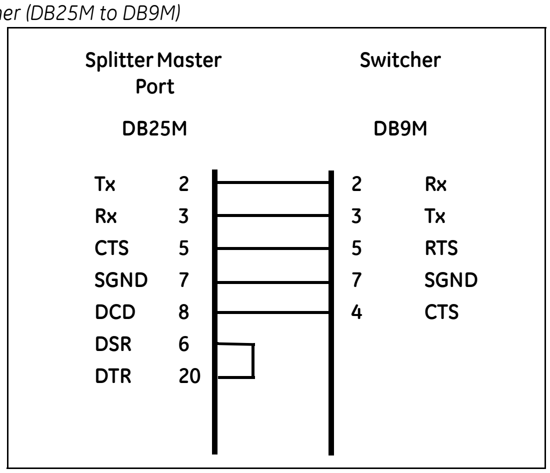


Figure 106.Overview of the cable configuration using a splitter

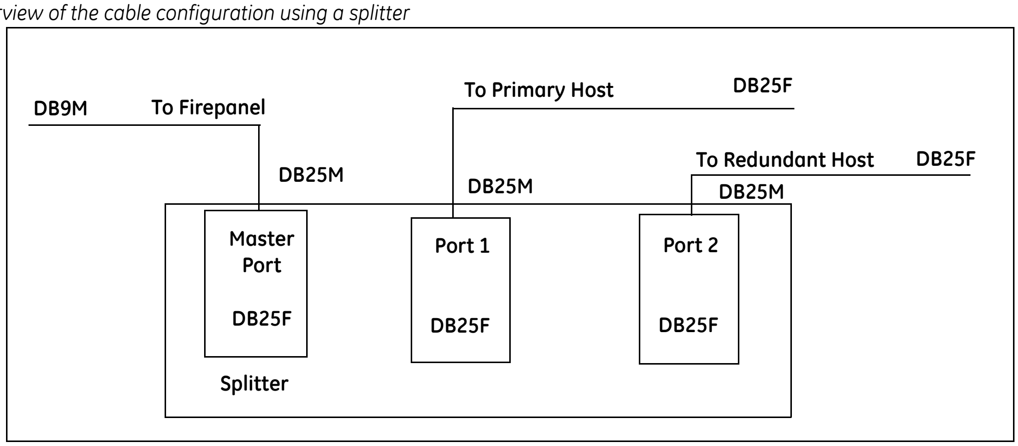
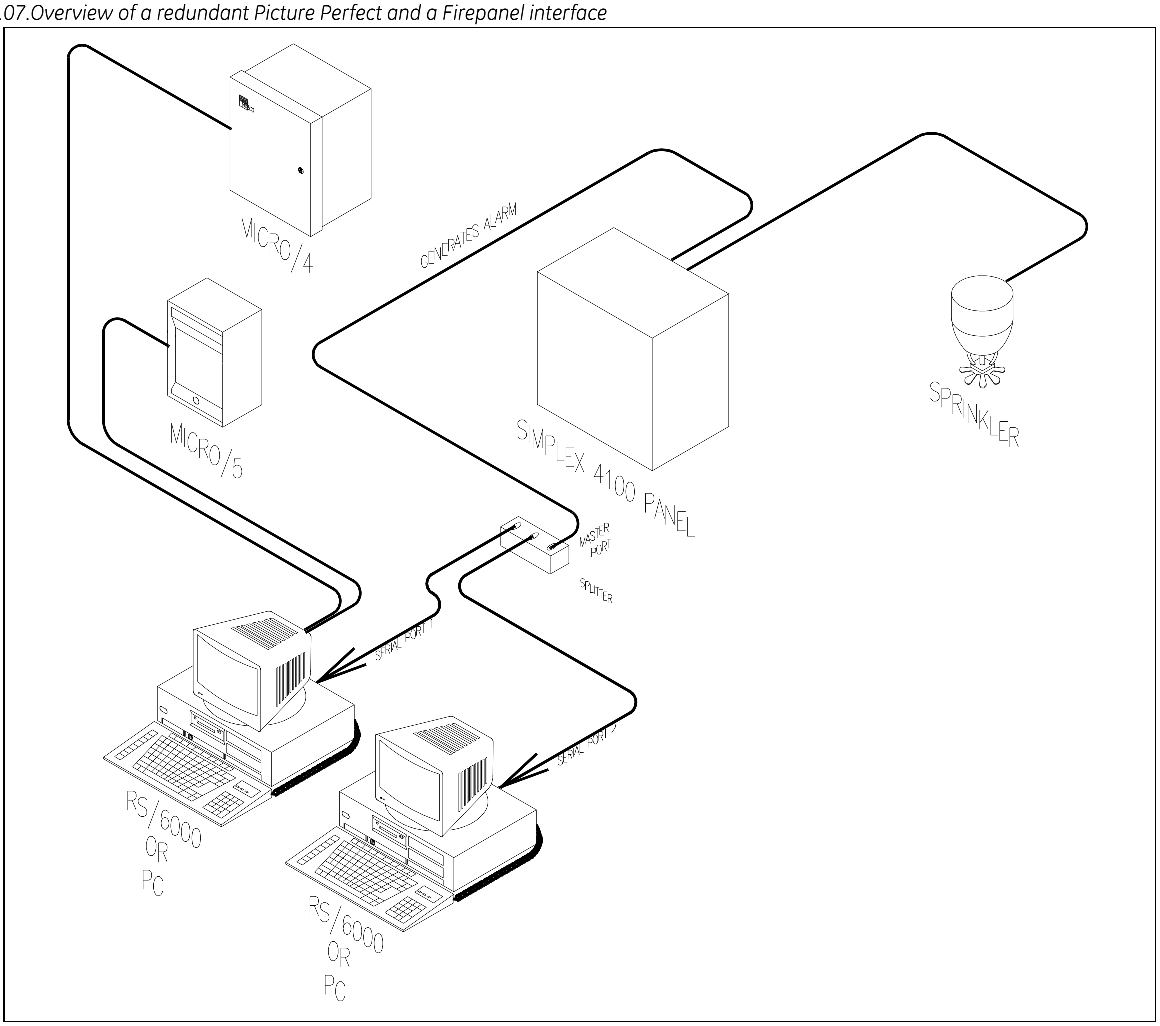


Figure 107.Overview of a redundant Picture Perfect and a Firepanel interface



Configuration

Picture Perfect acts as a secondary monitoring system for the Simplex fire and other life-safety alarms. The Picture Perfect/Simplex Interface processes only Alarm and System Reset Complete messages from the Simplex panel. All other Simplex messages such as Trouble, Abnormal, Acknowledge, Alarm Silence, etc., will be ignored. In addition, it should be noted that because the communications link between Picture Perfect and the Simplex panel is uni-directional, the Picture Perfect system cannot determine if there is a communications break in the line. Therefore, no alarm is reported in this situation.

Prior to defining alarms and input groups on the Picture Perfect system, the Simplex system must be already configured. Alarm points must have an eight-digit identifier as part of their description on the Simplex system.

Reset message

Simplex alarms and System Reset Complete will be displayed on Picture Perfect Alarm Monitor and routed to history. It is not necessary for the System Administrator to configure the System Reset message. It is automatically inserted into the alarm and input group tables with the appropriate descriptions. These descriptions must not be changed.

The Simplex panel does not send resets individually. A System Reset Complete message, generated when all the Simplex alarms have been reset, is treated as an alarm and routed to Alarm Monitor and History.

A reset message appears in the following format:

```
SIMPLEX SYSTEM RESET COMPLETE, NO ALARMS PRESENT
```

The reset from the Simplex system will be displayed on the Picture Perfect Alarm Monitor using the RS/6000 or Linux server's date/time stamp for the reset messages.

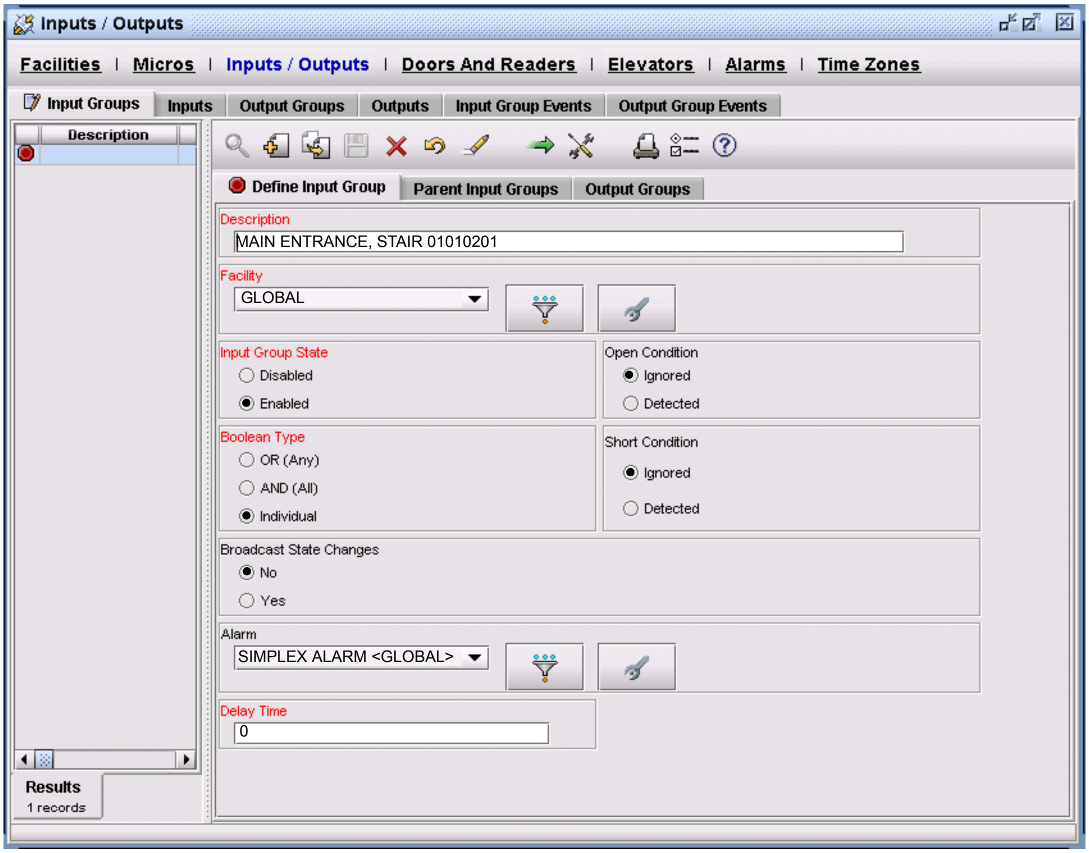
Adding or modifying an input group

Each Simplex alarm must have an individual input group assigned which includes an eight-digit identifier between the < and > symbols. These symbols must be part of the alarm description on the Simplex system; however, they should not be entered as part of the description on the Picture Perfect system. The description field in the Input Group screen, which allows for 60 alphanumeric characters as shown in *Figure 108*, must be such that it is meaningful and must include the eight-digit identifier number as part of its description.

Follow these steps to add an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.
3. Click **Save**.
4. Click **New** to add another input group.

Figure 108.The input group screen



Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. In the **Description** field of the **Input Groups** form, enter ***<eight digit ID>*** as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

If you want to see a unique Picture Perfect alarm displayed for each Simplex alarm, define a separate alarm for each Simplex alarm and assign it to a corresponding input group. If you choose not to define a unique alarm description for each alarm, define just one Picture Perfect alarm as shown in *Figure 109*. This choice is strictly at the discretion of the operator.

You must define an alarm and input group for every point that is detected by the Simplex system. When alarms and resets are received, they are transmitted to the Picture Perfect system for processing. Each alarm will be routed to the Alarm Monitor and history.

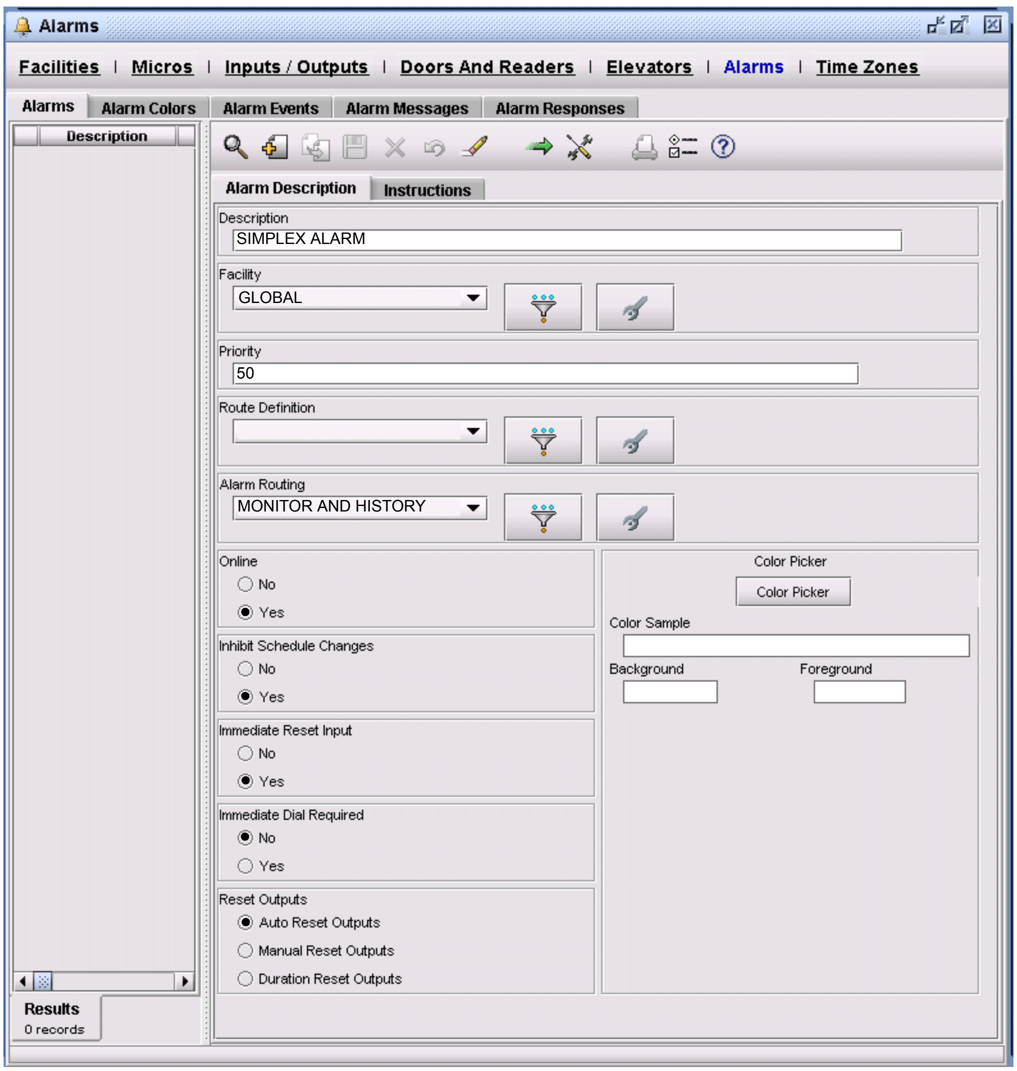
Alarms are handled as logical alarms so they can be responded to and removed without being physically reset.

The Description field of the Alarms screen simply displays to the Picture Perfect system that a Simplex alarm has been triggered and identifies the priority of the alarm.

Follow these steps to add a Simplex alarm:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form. Make sure that:
   - **Alarm Routing** is set for at least **MONITOR** but preferably **MONITOR AND HISTORY**.
   - **Online** and **Inhibit Schedule Changes** are set to **Yes**.
   - **Reset Outputs** is set to **Auto Reset Outputs** so the alarm can be removed from the Picture Perfect **Alarm Monitor** without being reset.
3. Click **Save**.
4. Click **New** to add another alarm.

Figure 109.The alarms screen



Follow these steps to modify the alarm:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** form, enter a search criteria using a key word and the wild card character, for example: `SIMPLEX*`.
3. Click **Find**.

   The desired alarm or multiple matches will appear. Locate the correct alarm on the grid.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

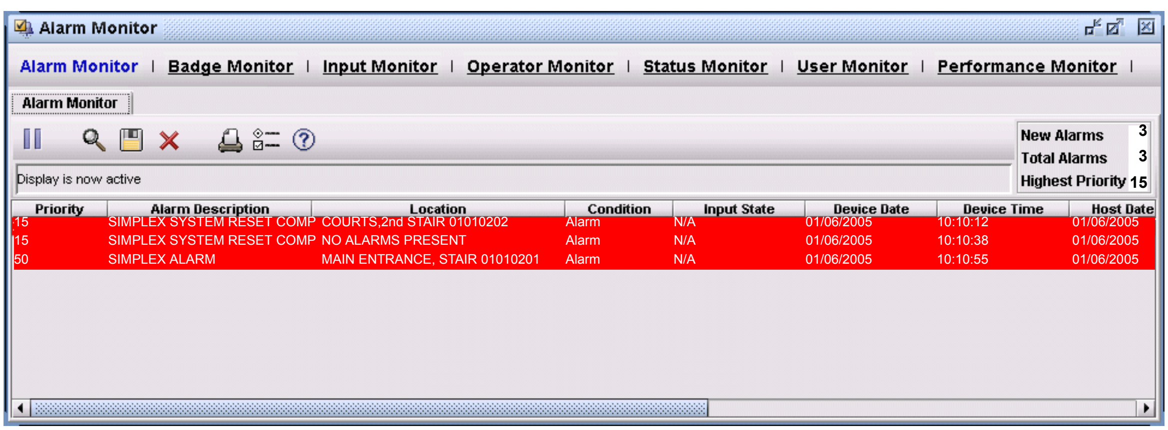
Monitoring alarms

The Alarm Monitor screen displays incoming alarms and their priority, count and status. Alarms display on the Alarm Monitor in order of their priority. When an alarm occurs, the system beeps and displays a pop-up window to notify the operator.

A System Reset Complete message is generated when all the Simplex alarms have been reset. This message will be treated as an alarm and routed to Monitor/History.

Click on the Monitor/Alarm Monitor icon to bring up the Picture Perfect Alarm Monitor screen. *Figure 110* shows a sample list of alarms, their location, and the date and time of occurrence.

Figure 110.The Alarm Monitor screen



Refer to the *Picture Perfect User Manual* for more information on monitoring and responding to alarms.

Extended configuration

The Simplex interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/simplex.cfg
/cas/db/text/simplex.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/simplex.cfg

This file contains configuration information specific to the copy of the interface that connects to the Simplex device attached to the specified port. It consists of a series of text lines, each containing a variable name followed by a value or setting. The Simplex interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

```
The following is an example of the contents of the port configuration file for a Simplex
device attached to port /dev/tty5:
/cas/db/text/simplex.cfg


#
#                       simplex.cfg
#                       Copyright (C) 1995-2003 GE Interlogix, Inc.
#                        All Rights Reserved.
# This file generated from the following installation script.
#
# @(#)simplex.inst 1.5 06/10/03
#
# This file contains the configuration information for the SIMPLEX
# alarm interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from.
#
# All information is divided into two sections, "configuration item
# label", and the desired setting.
#
# The following values are unique to the SIMPLEX interface do not
# change unless instructed by GE Interlogix CASI.
#
# These values are setup at installation, and are permanent!
# DO NOT touch these lines.
#
ResetConnAlarm          92
ResetConnInGrp          120
PositionTimeAlarm       3
PositionAmPmAlarm       12
PositionMonthAlarm      23
PositionYearAlarm       27
PositionDateAlarm       20
```

```
#
# The following values are setup based on your installation responses.
#
PortName                /dev/tty5
PortBaud                1200
```

/cas/db/text/simplex.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the Simplex redundant configuration file: `/cas/db/text/simplex.redundant.cfg`

```
#
#                simplex.redundant.cfg 1.4
#                Copyright (C) 1995-2003 GE Interlogix, Inc.
#                 All Rights Reserved.
# simplex.inst 1.5 06/10/03
#
# This file contains the configuration information for the SIMPLEX
# SYSTEM interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper    Y
RedundantHosts   primary1,backup1
```

Interface data file backup and restore

The Simplex interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 18, Simplex interface data file*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Simplex software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Simplex interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 18. Simplex interface data file

Data file name	Description
`/cas/db/text/simplex.cfg`	TTY port extended configuration definition files (* is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/simplex.redundant.cfg`	Simplex redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix M Configuring a Stentofon Touchline interface

This appendix provides information on configuring the Stentofon interface to Picture Perfect which acts as a secondary monitoring system for the Stentofon TouchLine Intercom System.

In this appendix:

Introduction

The Stentofon interface to Picture Perfect acts as a secondary monitoring system for the Stentofon Intercom System and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

The Stentofon Intercom System communicates with the Picture Perfect host through a serial line connection. Messages or alarms recognized by the Stentofon interface are looked up in the Picture Perfect database using the Input Group table. Picture Perfect will have to be set up with the appropriate input groups and alarms before they can be recognized. Optionally an output group and associated outputs can be tied to an input group. This is the standard method for setting up other hardware on a Picture Perfect system. The details of setting up the appropriate database records will be covered in more detail in *Configuration* on page 305.

The communication from the Stentofon Intercom System to the host is unidirectional. No handshaking is required for the interface. The protocol of the interface is the serial transfer of information one line at a time.

Redundant systems

The Stentofon Touchline Intercom System interface to Picture Perfect supports operations in a redundant Picture Perfect environment, where two hosts have connectivity to a single Touchline Exchange. Connectivity is achieved using a splitter between the Picture Perfect system and the Touchline Exchange. This allows the physical connection of the Stentofon Touchline Intercom System to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Stentofon Touchline Intercom System interface software executes on both Picture Perfect hosts and both receive alarm notifications from the Touchline Exchange. However, only the interface software executing on the primary host processes the alarms. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the Touchline Exchange.

Software requirements

The software requirements for the Stentofon interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Stentofon interface (`stentofon`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect Stentofon interface (`stentofon`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Stentofon Intercom system, provided by the manufacturer, including:
  - PMF-R processor board with Security Software Package #64401

Note: Refer to the Stentofon Technical Documentation included with the Security Software Package #64401 for instructions on how to program the Stentofon to forward data to an external system. This configuration must be done prior to installation of the Picture Perfect Stentofon Interface Software package.

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Stentofon communication program is started.

- Cable to connect the Picture Perfect system to the intercom console port. Refer to *Figure 111*.

Figure 111.Cable pinouts: Picture Perfect system to intercom system (DB25F to Port C)

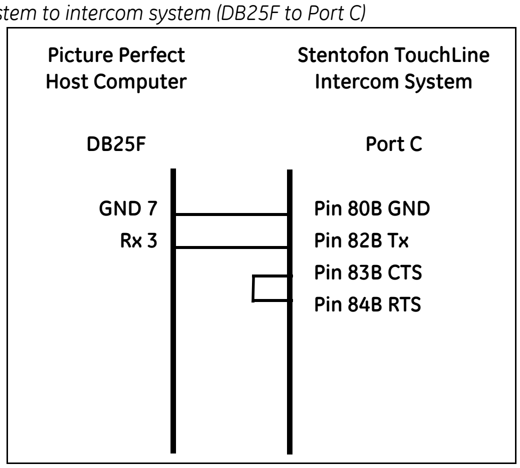
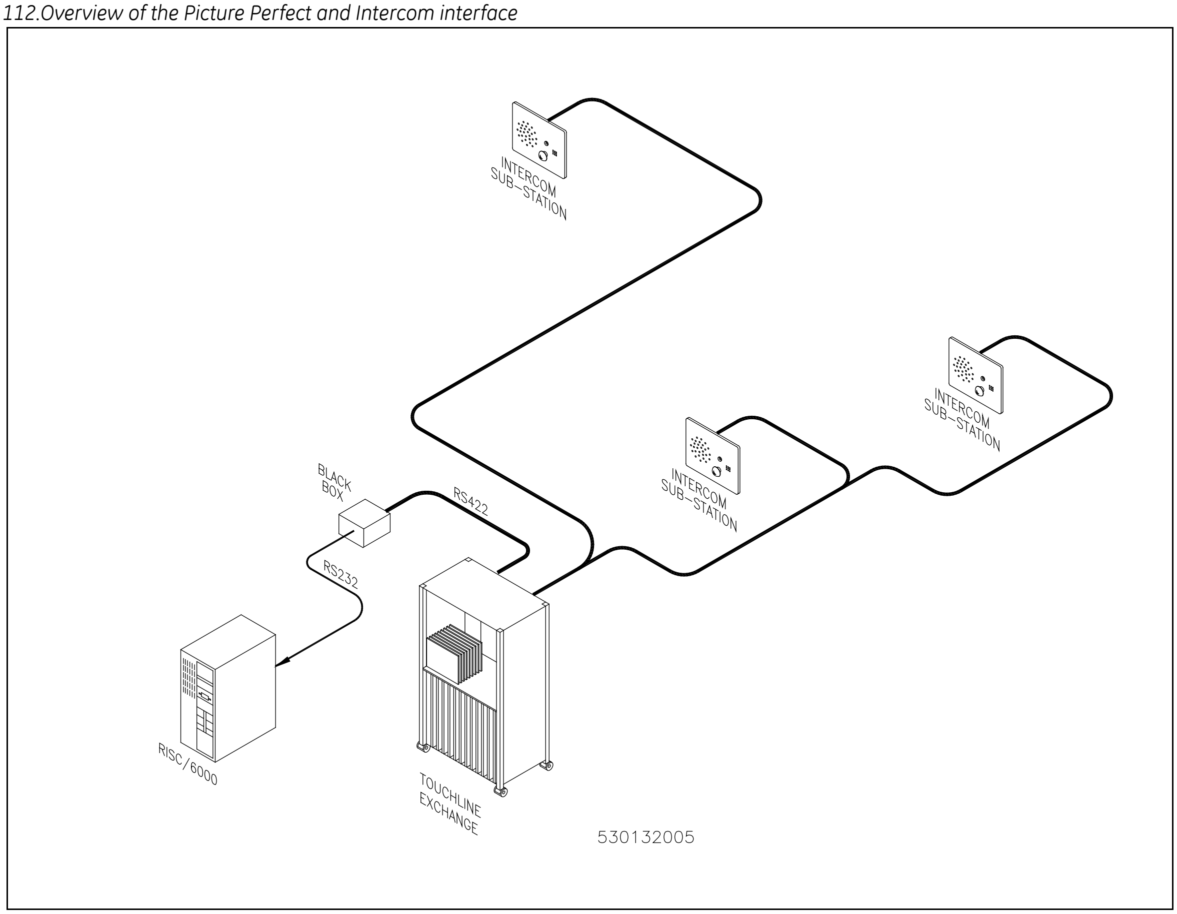


Figure 112.Overview of the Picture Perfect and Intercom interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Stentofon Intercom system, provided by the manufacturer, including:
    - PMF-R processor board with Security Software Package #64401

Note: Refer to the Stentofon Technical Documentation included with the Security Software Package #64401 for instructions on how to program the Stentofon to forward data to an external system. This configuration must be done prior to installation of the Picture Perfect Stentofon Interface Software package.

- A standard splitter box
- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

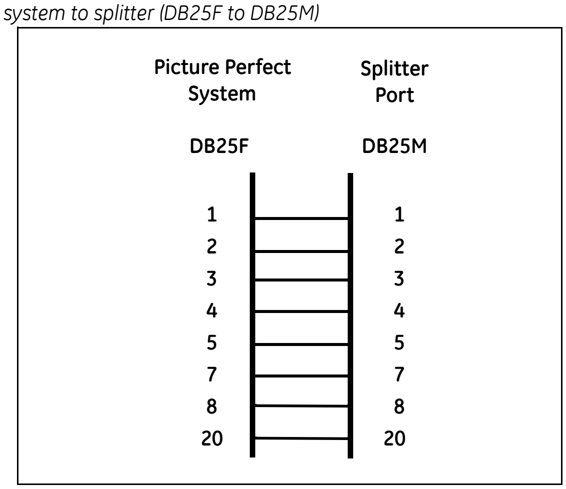
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Stentofon communication program is started.

- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 113*.

Figure 113.Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect the splitter master port to the Stentofon Intercom System. Refer to *Figure 114*.

Figure 114.Cable pinouts: Picture Perfect system to intercom system (DB25M to Port C)

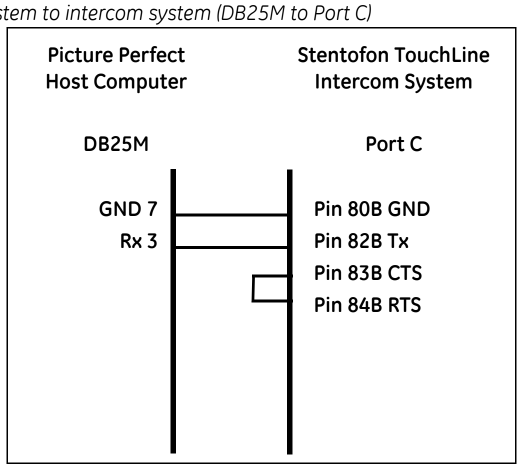
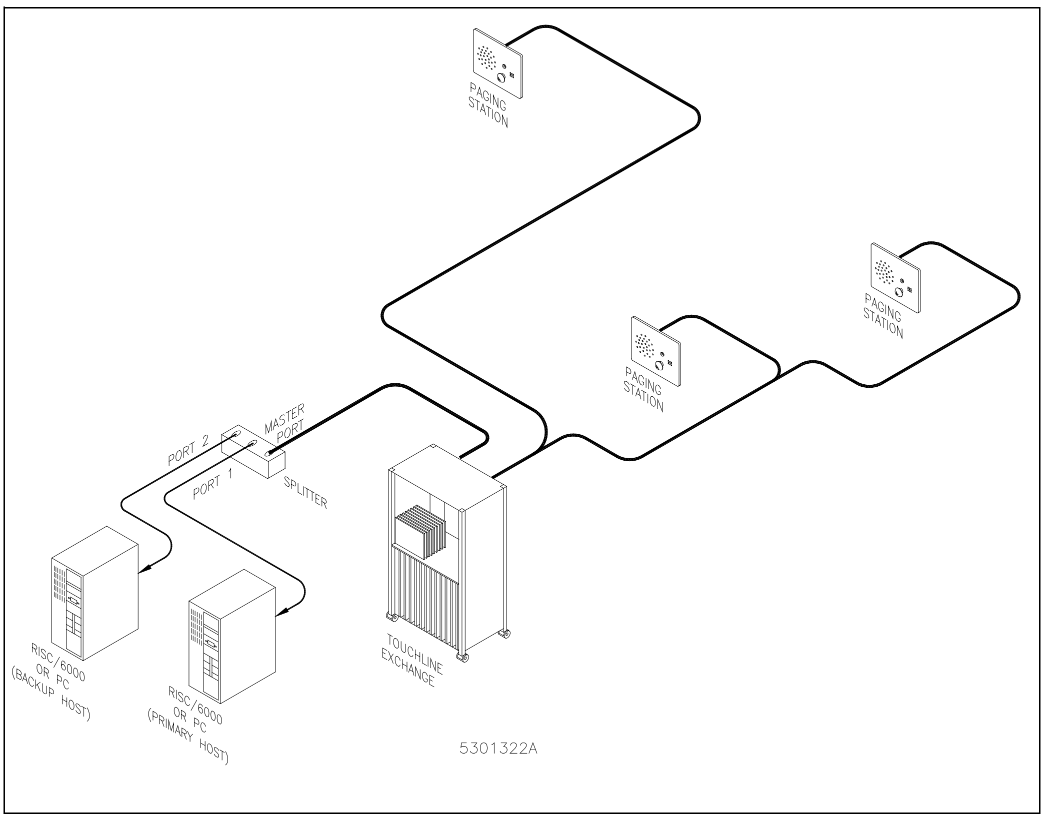


Figure 115.Overview of the redundant Picture Perfect and intercom interface



Configuration

The Stentofon interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. The messages used by the Stentofon interface were derived from the Stentofon TouchLine Exchange protocol as described in *Message types* on page 323. These messages must be configured on the Picture Perfect system.

There are two methods available to configure these messages:

1. Automatically using the `stngen` data generator tool
2. Manually using Picture Perfect

If you plan to enter many messages at once, we strongly recommend you use the `stngen` command line tool. Using `stngen` exclusively to create or modify data records will enable you to keep track of the specific messages that are being monitored for a particular panel on a specific port. This tool is explained in detail in the following section. However, if you choose to use Picture Perfect to insert the database records, this procedure is explained starting on page .316 with the section entitled *Using Picture Perfect to configure the Stentofon interface*.

Note: Adding outputs and output groups must be done manually using Picture Perfect.

Using stngen

The command line data generator tool, `stngen`, can be used to install or uninstall database records that are associated with the Stentofon Intercom System alarm interface. It is part of the Stentofon alarm interface package for Picture Perfect and is available when that package has been installed.

The Stentofon Intercom System is capable of producing a large number of messages for all of the pagers and exchanges that may be installed. For Picture Perfect to monitor the numerous message combinations would require a large number of input group and alarm database records to be entered on the system. To add to the complexity, there may be more than one Stentofon Intercom System interface running on a Picture Perfect system. The `stngen` tool will aid in the maintenance aspect when there are multiple Stentofon Intercom System interfaces installed and running.

When a Stentofon intercom is added or removed the tool can be used to quickly install or uninstall those database records associated with a particular interface. This is possible by carefully segregating the input group and alarm database records for each Stentofon interface running on the Picture Perfect system.

The install portion of this tool is explained in the section, *stngen – uninstall* on page 314.

stngen – Install

The install portion of the tool generates input group and alarm database records. Before running the install program, you will need to:

- Create an input file.
- Know the input group prefix.
- Create a list of the paging stations that are going to be monitored. This kind of report can be obtained from the Stentofon system.

Input file

An input file is required when using the install portion of the `stngen` tool. It describes the types of messages and pager locations to be monitored by the Stentofon alarm interface. The input file is a text editable file that must be created prior to running the tool. The installation portion of the tool will ask you the name of the input file you want to use. The input file will be parsed by the tool and the appropriate input group and alarm records will be created. If the input specifies activation of CCTV devices, the appropriate definition records will be generated and appended to the mapping file specific to each CCTV switcher interface. The CCTV switcher interface tasks can be signalled to access the new information, making CCTV control active with the new information. The format and rules for the file are discussed in the following sections.

To create an input file you will need to know:

- The version of Picture Perfect you are running. This is very important because the layout of the database records may be different depending on the version of Picture Perfect that is running and this tool can generate different output depending on the version.
- The paging locations (pager station ID's) to be monitored.
- For each paging location, whether or not an alarm condition should be generated for the various types of communication activities possible, as discussed later.
- For each paging location and communication activity, whether or not that activity requires CCTV activation, and if so, the CCTV switcher device name, CCTV number, and the port to which it is attached. There are eleven CCTV switcher products currently supported as listed below.

The last three bullets comprise the data format part of the input file. With this information, the `stngen` tool will generate and load the database with the appropriate input group and alarm database records.

Table 19. Supported CCTV switcher products

Switcher name	Manufacturers product designation
allegiant	Burle Allegiant TC8*x*0*y*
allplex	Burle Allplex TC8928B
amdyn	American Dynamics
grundig	Grundig VAZ300
javelin	Javelin JO326HI
kalatel	Kalatel KTD-312
maxpro	MAXPRO RD-AT100
panasonic	Panasonic PFW Model 500
panasonic550	Panasonic WJ-SX550A
pelco/pelcob	Pelco CM9750
viper	Vicon Viper VPS1330 and VPS1344

Picture Perfect version

The first line of the input file must contain the Picture Perfect version that is running. The version number is used by the `stngen` tool to determine the database input. The current versions that are supported by the `stngen` tool are:

- 1.7 (RISC/AIX 4.3.3 and Red Hat Linux 7.2)
- 2.0 (RISC/AIX 5.1L and Red Hat Linux 7.3)
- 4.0 (RISC/AIX 5L Version 5.2 or Red Hat Linux WS, ES, or AS 4.0)
- 4.5 (RISC/AIX 6.1 or Red Hat Linux 5.3)

Input file data format

The lines of data that follow the version information should contain rows of delimited text data that define the paging station identifier, the communication activity, and optionally a CCTV device or switcher name and the CCTV alarm number. The delimiter character between fields must be the "|" symbol. There should be one line of data for each unique combination that is going to be monitored.

The format of a data record is as follows:

```
<Station>|<CommActivity>|<AlarmDesc>|<Facility>
[|<CCTVDeviceName>|<CCTVNumber>|<Port>]
```

<Station>

This is the 4 character pager station identification number.

<CommActivity>

This is the type of communication activity (**Request**, **Connect**, **Disconnect**) as described in *Message types* on page 323.

<AlarmDesc>

This is the unique alarm message text to be displayed on the Picture Perfect **Alarm Monitor** screen and/or logged to the history file.

<Facility>

This `id` of the facility that will be used for the `input_group` and `alarm` records generated. During the execution of the `stngen` program, you will be prompted to select a default Stentofon facility from the currently defined facilities on the system. If a facility value is not specified in the input file, then the default Stentofon facility that was selected will be used. To determine the valid `facility id` values, create a SQL report, using as the SQL statement "`SELECT id, description FROM facility`", print the report, and keep it handy when creating the input file.

<CCTVDeviceName>**,**<CCTVNumber>**, and** <Port> **fields**

These fields are optional, but if present, identify a CCTV switcher, which camera is to be controlled when the alarm occurs, and which port.

<CCTVDeviceName>

Valid values for the field are defined in column 1 of *Table 19, Supported CCTV switcher products* on page 306.

<CCTVNumber>

This is the CCTV alarm number. Refer to the appropriate Picture Perfect CCTV interface document for information on how to specify CCTV information.

<Port>

The TTY port on which the CCTV switcher is connected to the Picture Perfect host. When specifying the port, use only the tty portion of the name. For example, if the CCTV switcher is connected on `/dev/tty2`, only specify `tty2`.

Example input file

The following is an example of an input file for a Picture Perfect 4.5 system.

```
4.5
F401|Request|Station #F401 - Request||kalatel|0|tty2
F401|Connect|Station #F401 - Connect||kalatel|1|tty2
F401|Disconnect|Station #F401 - Disconnect||kalatel|2|tty2
F110|Request|Station #F110 - Request||kalatel|1|tty3
F110|Connect|Station #F110 - Connect||kalatel|2|tty3
F110|Disconnect|Station #F110 - Disconnect||kalatel|3|tty3
FFF3|Request|Station #FFF3 - Request||kalatel|4|tty3
FFF3|Connect|Station #FFF3 - Connect||kalatel|5|tty3
FFF3|Disconnect|Station #FFF3 - Disconnect||kalatel|6|tty3
FFF0|Request|Station #FFF0 - Request||kalatel|1|tty2
FFF0|Connect|Station #FFF0 - Connect||kalatel|2|tty2
FFF0|Disconnect|Station #FFF0 - Disconnect||kalatel|3|tty2
.
.
.
```

An example of the input groups and alarm records that are generated from one line of an input file is shown in the section *Input group and alarm records generated by stngen* on page 309.

Input file recommendations

Always keep the input file for future reference on how your system has been set up. It will be extremely useful in understanding what database records have been generated. It will be required information for Customer Support should you need help in configuring the interface.

DO NOT re-use the original input file that has had data added to it without doing an uninstall first. Uninstalls are discussed in later sections. If you have new data for the generator and have not uninstalled using `stngen`, then you should uninstall or put it in a separate input file.

Input file error checking

The input file will be checked for error conditions before any data records are generated. If an error occurs within the input file, the `stngen` tool will display the error on the screen. The type of error, the column it occurred in, and the line it occurred on in the input file will be given. The input file must be error free before any data records are generated.

Input group prefix

The Stentofon interface uses the input group prefix to search specific input group records for messages that are to be monitored. This input group prefix was established during the interface's installation, for every serial line that was configured. The prefix for the Stentofon interface is stored in the configuration file for that interface and is read every time it is started. With this in mind it is a requirement to know the input group prefix of the

interface for which the `stngen` tool is going to generate database records. To determine this you must look in the appropriate `/cas/db/text/stn_ttyN.cfg` file where `ttyN` is the tty name of the port for which the interface is configured. Examine the appropriate file and look for a line that starts with "InpGrpPrefix". The value following this string is the input group prefix being used by the Stentofon interface for that port.

Input group prefix usage when installing

When using the install portion of the `stngen` tool, the input group prefix is used as the prefix for the description field for all input group records generated. Again, it should be stressed that the input group prefix used by the tool must match the Stentofon interface that is being targeted.

Input group prefix when uninstalling

The input group prefix is used when using the uninstall portion of the `stngen` tool. All input group records that have descriptions that match the input group prefix (the first five characters) will be removed from the database. The Alarm records that each input group points to will be removed with one exception. If the Alarm record is linked to any other input group records outside of the ones to be removed, the tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records to which other input group records are linked.

Input group and alarm records generated by stngen

The input file processed by `stngen` produces input group and alarm database records that are inserted into the database when the tool is run. The input group records created are unique for each valid line in the input file. This is done by combining the input group prefix, pager identification number, and communication activity information into the description field of an input group record. If optional CCTV information is specified, a new entry will be created and appended to the mapping table file for the specified CCTV switcher interface program. For example, let's examine the second line of data in the example input file described earlier and assume an input group prefix of "STN01".

```
F110|Request|Station #F110-Request|-1|kalatel|1|tty3
```

This line would generate one `input group` record with the following `description` field:

```
STN01.F110.Request
```

One `alarm` record would be generated with the following `description` field:

```
Station #F110-Request
```

The input group record would be linked to this alarm.

Since CCTV information has been provided, a new entry will be added to the Kalatel interface program mapping table file to enable control of Kalatel camera 1 for this input group specification. After CCTV switcher mapping table files are updated, signals may be sent to the CCTV switcher interface tasks to force a reload of the mapping files to make CCTV control for the Stentofon active.

There are obviously other important fields to an input group and alarm record that automatically get filled in by the generator. For the input group records, the following fields are set accordingly:

Using stngen – install

Before you start:

- You must have root permission to run the `stngen` tool.
- The database must be running. The tool will check this when `stngen` is invoked, and if not, attempt to start it.
- A valid input file must exist that contains the Picture Perfect version and data lines for the message types to be monitored for the described devices.
- You must know the input group prefix used by the Stentofon interface that is being targeted for data generation. See the section *Input group prefix* on page 308 for more information.

Follow these steps to use the stngen tool to install database records:

1. Log in as a user with system permission.
2. Open a new window.
3. `Type su - root` to become the `root` user.
4. Change to the directory where the input file is located.
5. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `stngen` tool and the database tools it uses.
6. Type: `stngen` Enter

   Messages similar to the following will appear on the screen:

   ```
   Stentofon Data Generator 2.0
   Would you like to (i)nstall or (u)ninstall data records (i/u)? [i]
   ```
7. To use the install option, type: `i` Enter

   The following messages will display:

   ```
   You have chosen to install database record
   Please enter input file name:
   ```
8. Enter the name of your input file.

   The input file you entered will be displayed and you will be asked to confirm it.

   ```
   You entered as the input file name:stn.inp
   Is this correct (y/n)? [y]
   ```
9. To confirm the input file name, accept the default `[y]` by pressing Enter. Enter `n` to change the name.

If you entered `n`, you will be asked to re-enter the name. If you entered `y`, the following messages will display.

```
Enter the input group prefix to be used when creating the records.
It must be "4" to "5" characters with the last character(s) numeric.
For example: STN01
NOTE: This prefix must be the same one that is used by the interface that is being
targeted. Refer to the documentation for more information about input group
prefixes.
Enter the input group prefix:
```

10. Enter the name of your input group prefix.

    The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: STN01
Is this correct(y/n)? [y]
```

11. To confirm the input group prefix, accept the default `[y]` by pressing Enter. Enter `n` to re-enter the prefix.

    If you entered `n`, you will be asked to re-enter the value. If you entered `y`, messages similar to the following will be displayed, regarding the selection of a default facility for the Stentofon interface:

```
**--------------------------------------------------------------**
**        Default Stentofon Facility assignment portion**
**--------------------------------------------------------------**
When the input_group and alarm records are created, they will require an associated
facility. You need to select the default facility that will be used when creating
the input_group and alarm records, if an explicit one is not specified.
The currently available (defined) facilities will be displayed, and you will need to
make a selection from the provided list. If you need to create a new facility
specifically for the Stentofon input_groups and alarms, then you should exit this
program, create the facility using the GUI, then re-run this program and then choose
that facility.
Do you wish to exit this program now (y/n)? [n]
```

12. Enter a `y` to exit the script or an `n` to enter a facility from the choices that will be provided.

    If you entered `y`, you will exit the program, and you may create a facility specifically for the Stentofon interface, if you so desire, then re-run the script.

    If you entered `n`, a list of the currently defined facilities on your system will be displayed, and you will need to make a selection. If the number of facilities on your system exceeds 18, you will need to press Enter to continue through the list, until you get to the prompt. When you observe the facility that you desire to use by default with the interface, keep track of the number. This list will be similar to the following:

```
Acquiring facility list from database. Please wait...
```

```
The following facilities are defined on your system, and available to be chosen as
the default facility:
==================================================================
          1: DEFAULT FACILITY
          2: Building 1
          3: Building 2
          4: Building 3
          5: Building 4
          6: Building 5
          7: BLDG 1,2,3,4,5 AND PARKING
          8: BLDG 2 STUDIO
          9: BLDG 2 DESIGN AID
          10: Security Control Center
          11: Head Office
          12: Building 1 Garage
          13: Building 2 Garage
          14: Building 3 Garage
          15: Building 4 Garage
          16: Building 5 Garage
          17: Head Office Garage
          18: Penthouse
Press RETURN for more ...
          19: B-1 COMP ROOMS
          20: REGENT COURT
          21: Facility A
          22: Facility B
          23: Stentofon Facility
Enter the value of the default Stentofon facility [1-23] ...: [1]
```

13. Enter the number of the default facility to use with the Stentofon interface. This value will be used when creating `input_group` and `alarm` records from the entries in the input file, for which a specific facility is not specified.

    The facility you selected will be displayed, and you will be asked to confirm it.

```
You have selected as the default facility .... :Stentofon Facility
Is this ok (y/n)? [y]
```

14. Enter a `y` to confirm, or an `n` to re-enter the default facility.

    If you entered `n`, you will be asked to re-enter the value.

    If you entered a `y`, the facility you selected will be displayed, and the input data will be checked.

    If there were errors, they will be displayed and you will need to correct those errors and begin the process again.

    If no errors are found, the input group and alarm records will be entered into the Picture Perfect database. You will see messages similar to the following:

```
Default Facility chosen is ................: [Stentofon Facility]
**---------------------------------------------------------------**
**          End of Default Stentofon Facility assignment portion**
**---------------------------------------------------------------**
Checking input group file data...
Checking alarm file data...
Installing Records...
```

```
DBLOAD Load Utility           INFORMIX-SQL Version 9.30.UC4
Copyright (C) Informix Software, Inc., 1984-1997
Software Serial Number AAD#J328673
Table input_group had 12 row(s) loaded into it.
Table alarm had 6 row(s) loaded into it.
statement = UPDATE STATISTICS FOR TABLE input_group
statement processed OK
statement = UPDATE STATISTICS FOR TABLE alarm
statement processed OK
igd=STN01.F401.Request cctvName=kalatel cctv=0
kalatel 1548 518 1548 0 ktd_tty2
Creating CCTV device kalatel map addition file
/tmp/stn)kalatel.deltaigd=STN01.F401.Connect cctvName=kalatel cctv=1
kalatel 1549 519 1549 1 ktd_tty2
igd=STN01.F401.Disconnect cctvName=kalatel cctv=2
kalatel 1550 520 1550 2 ktd_tty2
igd=STN01.F110.Request cctvName=allplex cctv=1
allplex 1551 521 1551 1 allp_tty3
Creating CCTV device allplex map addition file
/tmp/stn)allplex.deltaigd=STN01.F110.Connect cctvName=allplex cctv=2
allplex 1552 522 1552 2 allp_tty3
igd=STN01.F110.Disconnect cctvName=allplex cctv=3
allplex 1553 523 1553 3 allp_tty3
igd=STN01.FFF3.Request cctvName=allplex cctv=4
allplex 1554 524 1554 4 allp_tty3
igd=STN01.FFF3.Connect cctvName=allplex cctv=5
allplex 1555 525 1555 5 allp_tty3
igd=STN01.FFF3.Disconnect cctvName=allplex cctv=6
allplex 1556 526 1556 6 allp_tty3
igd=STN01.FFF0.Request cctvName=kalatel cctv=1
kalatel 1557 527 1557 -1 ktd_tty2
igd=STN01.FFF0.Connect cctvName=kalatel cctv=2
kalatel 1558 528 1558 -2 ktd_tty2
igd=STN01.FFF0.Disconnect cctvName=kalatel cctv=3
kalatel 1559 529 1559 -3 ktd_tty2
Generated 6 new entries for CCTV switcher device kalatel map table
Generated 6 new entries for CCTV switcher device allplex map table
Successfully appended new entries to switcher device kalatel map table!
Successfully appended new entries to switcher device allplex map table!
Installation complete.
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes(y/n)? [y]
```

15. Enter a `y` to inform the system or an `n` to not inform the system.

    If you entered `n`, the changes just made will not be sent to the interface until the next time it is restarted and you will exit the script.

    If you entered `y`, a message will be sent to the running interface and the new map changes will be re-read and take effect immediately. Messages similar to the following will appear, then you will exit the script.

```
Sending signal USR2 to task ktd_comm...
Sending signal USR2 to task msan...
```

Using stngen to generate new paging station data after an initial installation

If there are new paging stations to be monitored by the Stentofon interface after an `stngen` installation, then one of the following methods should be used when using the `stngen` tool. If you are going to be changing paging station data in the input file for existing database records, then use Method 2 below.

Method 1

1. Create a new input file with the new data lines.
2. Invoke `stngen` and use the new input file.

Method 2

1. Use `stngen` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix.

Note: Any input group using the targeted input group prefix to be uninstalled that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file. Output and output group information is lost whenever the stngen tool is used to uninstall database records.

2. Modify or add the new paging station data to the input file.
3. Invoke `stngen` and use the modified input file to re-create the data records.

stngen – uninstall

This portion of `stngen` removes the database records associated with a specific Stentofon interface. **Before running the uninstall program, you will need to know the input group prefix.**

Note: It is a good idea to backup the database before using the uninstall portion of the stngen tool. This can be done through the Control/Backup form. See your Picture Perfect documentation for more details.

Input group prefix

All input group records that have descriptions that match the input group prefix (the first 4 to 5 characters) will be removed from the database. The alarm records that each input group points to will be removed as well but with one exception. If the alarm record is associated with any other input group records outside of the ones to be removed, no records will be removed and the user will be notified of this condition. This situation must be corrected by the user before any records can be removed using the `stngen` tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records to which other input group records are linked.

Note: Any input group using the targeted input group prefix to be uninstalled that was created manually through the Picture Perfect Input Group Form will be removed. That means it will be permanently lost if its data was not originally part of the input file.

Using stngen – uninstall

Before you start:

- You must have root permissions to run the `stngen` tool.
- The database must be running. `stngen` will check this when the tool is invoked.
- You must know the input group prefix used by the Stentofon interface that is being targeted for uninstallation.

Follow these steps to use the stngen tool to uninstall database records:

1. Log in as a user with system permission.
2. Open a new window.
3. Type `su - root` to become the `root` user.
4. Change to the directory where the input file name is located.
5. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `stngen` tool and the database tools it uses.
6. Type: `stngen` Enter

   Messages similar to the following will appear on the screen:

   ```
   Stentofon Data Generator 2.0
   Would you like to (i)nstall or (u)ninstall data records (i/u)? [i]
   ```
7. To use the install option, type: `u` Enter

   The following messages will display:

   ```
   You have chosen the UN-INSTALL portion of this script. You must enter the input
   group prefix to uninstall the Stentofon database records. This is the first "4" to
   "5" characters used in the description field of the input group records. Entering
   this prefix will result in the removal of the input group and associated alarm
   records from the database.
   If running multiple interfaces make sure you enter the prefix that matches the input
   group prefix used for that particular interface. If properly installed each
   Stentofon interface should have a different input group prefix that is used
   specifically for that interface.
   Do you know the input group prefix and want to continue (y/n)? [y]
   ```
8. To continue, press `y`. To stop, press `n`.

   If you chose to continue, the following message will display:

   ```
   Enter the input group prefix:
   ```
9. Enter the input group prefix.

The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: STN01
Is this correct (y/n)? [y]
```

10. To continue, press `y`. To stop, press `n`.

    If you chose to continue, the records will be deleted and you will see messages similar to the following:

```
The input group prefix being used is: STN01
Making alarm id checks...
Deleting input group and alarm records...
The following log files contain the SQL statements and errors logged during the
delete process:
       /tmp/stn_inpgrp_del.log
       /tmp/stn_alarm_del.log
Successfully deleted entries from switcher device allplex map file
Successfully deleted entries from switcher device kalatel map file
Un-install completed!
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

11. If this script was called from the removal script, then select n to not inform the system now since it's not running. When re-started, the changes will take effect. If the Picture Perfect system is running, select y if you want these changes to take effect now, or n if you want them to take effect at the next restart.

    If `n` was selected, you will return to the # prompt or back to the removal script.

    If `y` was selected, messages similar to the following will appear then you will exit the script.

```
Sending signal USR2 to task ktd tty5...
Sending signal USR2 to task msan...
```

Using Picture Perfect to configure the Stentofon interface

For a successful configuration, follow these steps:

1. Adding or modifying input groups for the 3 possible message types for each paging station to be monitored.
2. Adding or modifying alarms.
3. Adding or modifying output groups and outputs, if desired.
4. Monitoring alarms.

Adding or modifying input groups

The input group record description is the key to identifying specific Stentofon Touchline Exchange protocol messages. The format of the description is defined such that it can be set up to identify the specific message types coming from the Exchange for each paging station as identified in the Exchange protocol as described in *Message types* on page 323.

The following is the structure of an input group record description:

```
<IGP>.<PagingStation>.<MessageType>
```

`<IGP>`

The 4 to 5 character input group prefix described on page .308.

`<PagingStation>`

This is the 4 character Paging Station identifier; valid values are FFF0 through 9999 as described in *Message types* on page 323.

`<MessageType>`

Identifies the type of message and is one of Request, Connect or Disconnect corresponding to the five Exchange protocol messages as defined in *Message types* on page 323.

There must be a single period between the parts of the input group record description and spaces are not allowed anywhere within the description. This structure must be followed in defining input group records so that the Stentofon interface software can look for matches in the database using input group descriptions constructed from protocol messages received from the Exchange.

For each paging station that is to be monitored, you should define an input group record for each message type. An example of the input group record descriptions to monitor paging station FFF7 for a Stentofon interface using input group prefix STN01 is:

```
STN01.FFF7.Request
STN01.FFF7.Connect
STN01.FFF7.Disconnect
```

See *Figure 116* for an input group record containing a valid input group description.

The procedure for adding or modifying input groups is described below. Note that alarm records must be created prior to input group records as you must specify the alarm when defining the input group record. A description of the procedure for defining alarm records may be found in *Adding or modifying alarms* on page 319.

Note: Input groups and associated alarms that are created manually will be removed if the uninstall portion of the stngen tool is run since it removes records according to the input group prefix. Therefore, it is recommended that any manually created input_group/alarm pairs be added to the stngen input file, so they will be recreated if stngen uninstall, then stngen install have to be performed.

Adding an input group

Follow these steps to add an input group:

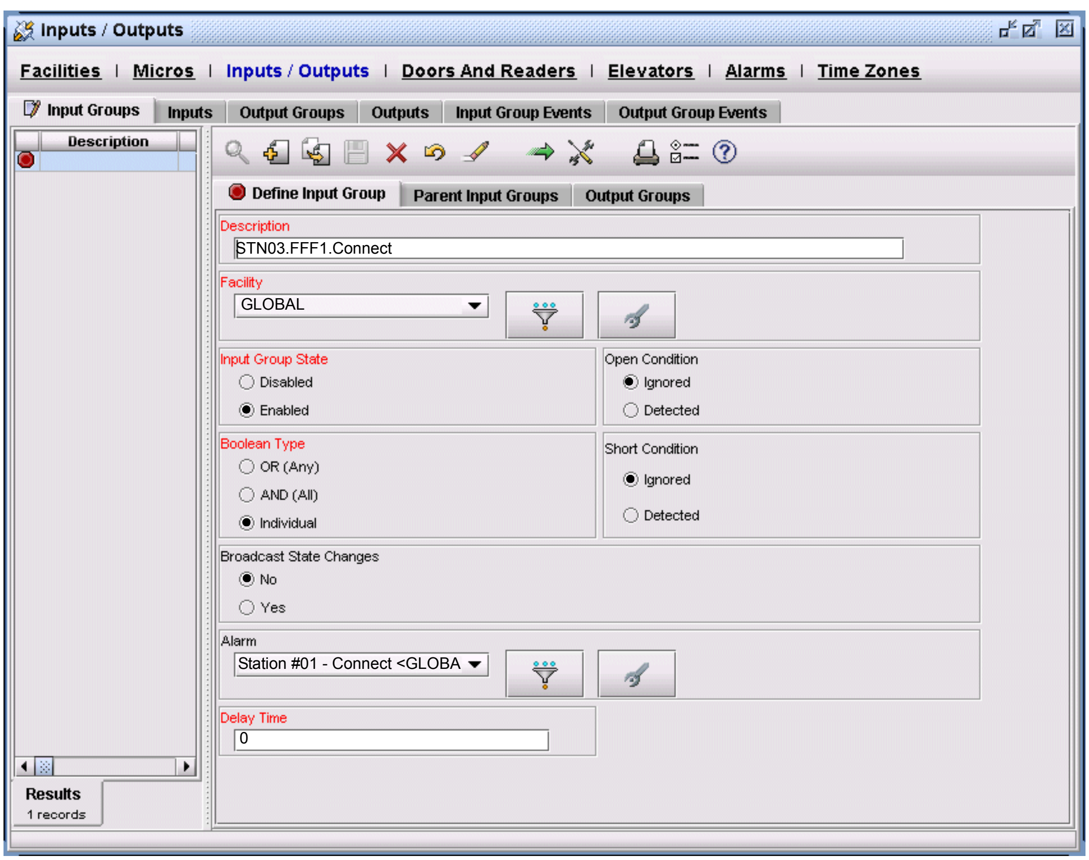
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Facility	(Facility the input group resides in)

3. Click **Save**.
4. Click **New** to add another input group.

Figure 116.Sample input groups screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying alarms

Each Stentofon input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded by Alarm History. The linking is done through the Input Group form after the Alarm record has been established. Creating alarm records that the input group records are linked to is required for the Stentofon interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the Alarm Monitor.

The alarm record description field should be used to further identify or describe the Stentofon input group to which it will be linked. Several input group records can be linked to the same alarm (for example, one alarm per paging station), but it would be prudent to set up one alarm record for each input group record. The alarm description field has no restrictions (other than a maximum length of 60 characters) or required format since all of the unique information for an Exchange protocol message is located in the input group description. However, each alarm description in the database must be unique.

The recommended format for alarm descriptions is to identify the paging station and the type of action that occurred. For the example input group descriptions given previously, the corresponding alarm descriptions might be as follows:

```
Station FFF7 - Request
Station FFF7 - Connect
Station FFF7 - Disconnect
```

An example of a valid alarm record is shown in *Figure 117, Sample alarm screen* on page 320. Alternatively, a single alarm could be defined for all three actions as follows:

```
Paging Station FFF7
```

The Alarm Routing should be set to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select None from the Set Alarm Routing picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

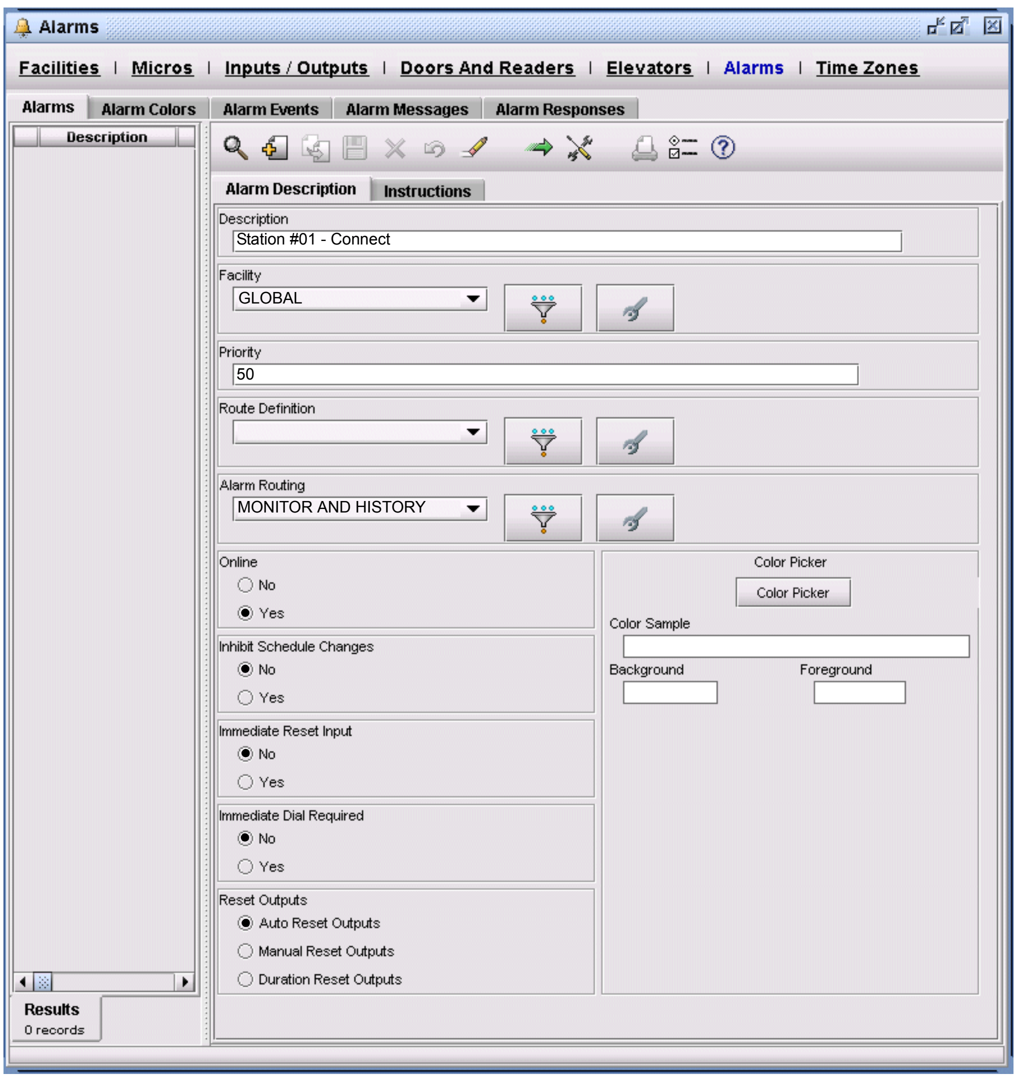
`Online`	`Yes`
`Immediate Reset Input`	`Yes`
`Reset Outputs`	`Auto Reset Outputs`

   Set the priority, alarm routing, facility, and instructions as needed.

Note: The routing must be set to one of the possible selections that includes the “MONITOR” for an alarm to show up on the Alarm Monitor and to allow control of CCTV cameras.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 117.Sample alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, that is, door strikes, lights or sirens, when Stentofon Exchange messages are received, you will need to configure an Output Group and a Output. The output group must be linked to the input group for the message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the *Picture Perfect User Manual*. All fields and options in the Outputs forms may not apply since this is a one way communication between the Stentofon Exchange and Picture Perfect.

Note: Configuring output groups and outputs is optional. If the stngen tool is used to uninstall database records, any outputs and output groups that you defined will be lost.

Monitoring alarms

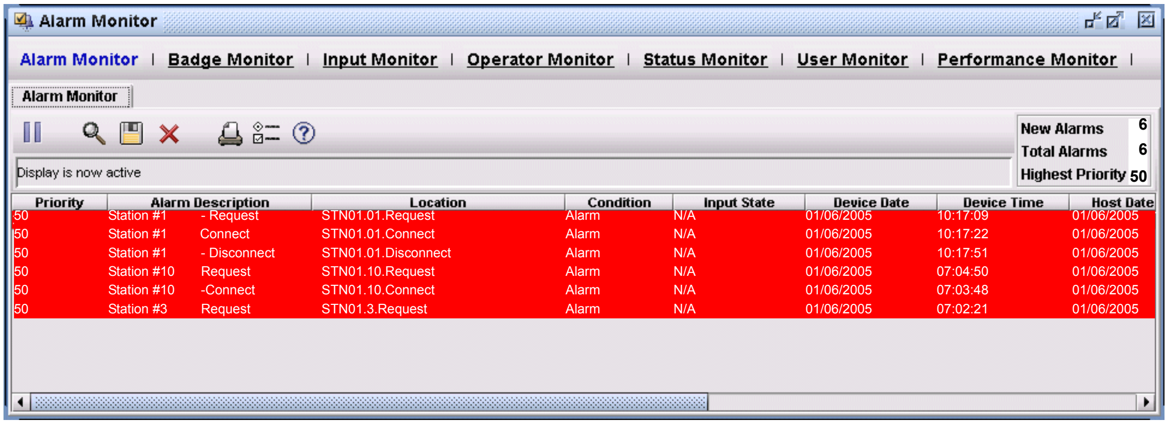
You are now finished with the basic configuration of the Stentofon interface. The Exchange messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell the paging station and action from the reported alarm.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the Stentofon Exchange since this is a one way communication.

All messages recognized by the Stentofon interface will show a condition of Alarm and an input state of N/A. As with other Picture Perfect alarms that come into the Alarm Monitor, the Count column will increment for those alarms that have come in multiple times. To remove Stentofon alarms from the Alarm Monitor, use the purge button to remove all alarms or click on the alarm to bring up an individual window and remove them individually. The time displayed in the Alarm Monitor is the time that Picture Perfect received the message from the Exchange.

Figure 118.Sample Alarm Monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system that used the input group prefix STN01 and has appropriate input group and alarm records to recognize the conditions coming from the Stentofon intercom. Below is an explanation of the information shown by the display.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created manually or by the stngen tool. The Location column corresponds to the description field of the appropriate input group record which was created manually or by the `stngen` tool.

Lines 1-3

Paging Station 1 completed a communication sequence with the Stentofon Exchange. It issued a request for communication, received a connection, and then terminated the connection.

Lines 4-5

Paging Station 10 is in the process of communicating with the Stentofon Exchange. It issued a request for communication and received a connection which has not yet terminated.

Line 6

Paging Station 3 has requested communication with the Stentofon Exchange but has not yet been connected.

Testing the interface

Once the input groups and alarm database records have been set up and the interface is running, it should be tested to make sure messages are being correctly recognized by the interface. The Alarm Monitor should receive the appropriate messages if they have been set up correctly. If the Alarms are not being shown on the Alarm Monitor, then the appropriate input group description should be checked to make sure that it follows the format specified for that message type listed under the *Adding or modifying input groups*section of this document. Make sure the appropriate Input Group prefix is being used in the description field and that it matches the one established upon installation in the `stn_ttyN.cfg` configuration file. Also, check the alarm routing field of the corresponding alarm record to make sure that the routing includes Monitor.

If there is a printer hooked up to the Stentofon Exchange, then the resulting messages that are being monitored by the interface can be compared against the printed output in terms of the parts of a message that are used to make up an input group or alarm record description field. If there are messages that are not being recognized by the interface that have been set up to do so and they are being printed, then call Customer Support for further assistance in debugging the problem.

Message types

All message types that will be recognized by the Stentofon interface software follow a uniform structure. This structure consists of a line containing a varying number of fixed sized 4 character fields with a blank space between the fields as a separator. A message line is preceded by a NUL (00) character synchronization marker and is followed by a carriage return (CR=0D hex) character and line feed (LF=0A hex) character pair. The following is a representation of this line structure:

`<Sync><MessageType>_<Data1>_<Data2>_..._<DataN>_<CR><LF>`

`(_)`

The underscore character represents a blank space (20 hex) character.

`<Sync>`

This is the synchronization marker (NUL=00 hex) character.

`<MessageType>`

This is a 4 character field that defines the message line contents.

`<DataX>`

These are 4 character data fields with interpretation based on `<MessageType>`.

`<CR><LF>`

This is the carriage return and line feed message line terminator pair.

The types of message lines as defined by the `<MessageType>` field that are accepted and processed by the Stentofon interface software are described in the following paragraphs.

Message Type 0307 - Local Call Request

The following is the structure of a Type 0307 message line:

```
<Sync><0307>_<Station>_<Data1>_<CR><LF>
```

`<Station>`

This is a 4 character pager station number originating the call request with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

`<Data1>`

Information that is not important to the Stentofon interface.

This message type defines a pager request to connect to the Stentofon Intercom System master exchange from a local location.

Message Type 0507 - Remote Call Request

The structure of a Type 0507 message line is as follows:

```
<Sync><0507>_<Station>_<Data1>_<Data2>_<Data3>_<CR><LF>
```

`<Station>`

This is a 4 character pager station number originating the call request with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

`<DataN>`

Information that is not important to the Stentofon interface.

This message type defines a pager request to connect to the Stentofon Intercom System master exchange from a remote location.

Message Type 0304 - Local Call Connect

The following is the structure of a Type 0304 message line:

```
<Sync><0304>_<Call_Handler>_<Station>_<CR><LF>
```

`<Call_Handler>`

This is the 4 character Stentofon call handler accepting the local call request with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

`<Station>`

This is a 4 character pager station number originating the call request with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

This message type defines a successful connection of the local pager to the Stentofon Intercom System. Note that many type 0307 messages for a station can occur before the connection is established. However, once the connection is established, no further requests will be honored until the pager station has been disconnected.

Message Type 0504 - Remote Call Connect

The following is the structure of a Type 0504 message line:

```
<Sync><0504>_<Call_Handler>_<Station>_<Data1>_<Data2>_<CR><LF>
```

```
<Call_Handler>
```

The 4 character Stentofon call handler accepting the remote call request with valid values from FFF0 through 9999 (leading Fs are used instead of 0s).

```
<Station>
```

This is a 4 character pager station number originating the call request with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

```
<DataN>
```

Information that is not important to the Stentofon interface.

This message type defines a successful connection of the remote pager to the Stentofon Intercom System. Note that many type 0507 messages for a station can occur before the connection is established. However, once the connection is established, no further requests will be honored until the pager station has been disconnected.

Message Type 0206 - Call Disconnect

The following is the structure of a Type 0206 message line:

```
<Sync><0206>_<Call_Handler>_<CR><LF>
```

```
<Call_Handler>
```

This is the 4 character Stentofon call handler disconnecting a call with valid values from FFF0 through 9999 (leading Fs used instead of 0s).

This message type defines disconnection of a pager from the Stentofon Intercom System.

Extended configuration

The Stentofon interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/stn_ttyN.cfg
/cas/db/text/stentofon.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/stn_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the Stentofon device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. The Stentofon interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a Stentofon device attached to port `/dev/tty5`:
`/cas/db/text/stn_tty5.cfg`

```
#
#                   stn_tty5.cfg
#                   Copyright (C) 1995-2003 GE Interlogix, Inc.
#                    All Rights Reserved.
# This file generated from the following installation script.
#
# stentofon.inst 1.18 06/18/03
#
# This file contains the configuration information for the STENTOFON
# alarm interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from. It also contains the unique input group prefix
# that the interface will use to recognize specific input group
# database records using this prefix.
#
# The InpGrpPrefix parameter is a required parameter in the
# configuration file. This parameter is the prefix that must be used
# in the description field for all input groups that are to be
# recognized by the interface. If this parameter is changed here it
# must be changed for all the input groups that are using it as a
# prefix. This prefix is case sensitive so the declaration in here
# must match the one used in the input group description. This
# description must be 5 characters with the last two being numeric. The # input group
prefix declared in here will be read when the interface
# is started. If more than one interface is installed then the input
# group prefix must be unique in each configuration file.
#
# An example prefix would be "STN01" and the next interface that is
# installed could be "STN02"
```

```
# The following values are unique to the STN interface, do not
# change unless instructed by GE Interlogix - CASI
Icanon              y
#
# The following values are setup based on your installation responses.
#
InpGrpPrefix        STN01


PortName            /dev/tty5
PortBaud            9600
CharacterSize       7
Parity              e
StopBits            1
Xon                 y
Xoff                y
```

/cas/db/text/stentofon.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the Stentofon redundant configuration file: `/cas/db/text/stentofon.redundant.cfg`

```
#
#                    stentofon.redundant.cfg 1.5
#                    Copyright (C) 1995-2003 GE Interlogix, Inc.
#                     All Rights Reserved.
# stentofon.redundant.cfg 1.5 7/6/01
#
# This file contains the configuration information for the STENTOFON
# TOUCHLINE INTERCOM interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper        Y
RedundantHosts       primary1,backup1
```

Interface data file backup and restore

The Stentofon interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 20, Stentofon Interface Data Files*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Stentofon software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Stentofon interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 20. Stentofon Interface Data Files

Data File Name	Description
`/cas/db/text/stn_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/stentofon.redundant.cfg`	Stentofon redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix N Configuring a Stentofon 9600 interface

This appendix provides information on configuring the Stentofon 9600 interface to Picture Perfect which acts as a secondary monitoring system for the Stentofon Intercom System and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

In this appendix:

Introduction

The Stentofon 9600 interface to Picture Perfect acts as a secondary monitoring system for the Stentofon Intercom System and recognizes only the predefined message types built into the interface and set up through Picture Perfect.

The Stentofon 9600 Intercom System communicates with the Picture Perfect host through a serial line connection. Messages or alarms recognized by the Stentofon interface are looked up in the Picture Perfect database using the Input Group table. Picture Perfect will have to be set up with the appropriate input groups and alarms before they can be recognized. Optionally an output group and associated outputs can be tied to an input group. This is the standard method for setting up other hardware on a Picture Perfect system. The details of setting up the appropriate database records will be covered in more detail in *Configuration* on page 335.

The communication from the Stentofon 9600 Intercom System to the host is unidirectional. No handshaking is required for the interface. The protocol of the interface is the serial transfer of information one line at a time.

Redundant systems

The Stentofon 9600 Intercom System interface to Picture Perfect supports operations in a redundant Picture Perfect environment, where two hosts have connectivity to a single Stentofon Intercom Black Box Converter. Connectivity is achieved using a splitter between the Picture Perfect system and the Stentofon intercom. This allows the physical connection of the Stentofon 9600 Intercom System to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the Stentofon 9600 Intercom System interface software executes on both Picture Perfect hosts and both receive alarm notifications from the Stentofon Intercom. However, only the interface software executing on the primary host processes the alarms. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are not processed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the Stentofon Intercom.

Software requirements

The software requirements for the Stentofon interface and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package.
- Picture Perfect Stentofon 9600 interface (`stentofon9600`) package.

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package.
- Picture Perfect redundant system (`pprs`) package.
- Picture Perfect Stentofon 9600 interface (`stentofon9600`) package.

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone System

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Stentofon Intercom system, provided by the manufacturer, including:
  - Black Box Converter RS-422 to RS-232

Note: Refer to the Stentofon Technical Documentation included with the Security Software Package #64401 for instructions on how to program the Stentofon to forward data to an external system. This configuration must be done prior to installation of the Picture Perfect Stentofon 9600 Interface Software package.

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Stentofon 9600 communication program is started.

- Cable to connect the Picture Perfect system to the intercom console port. Refer to *Figure 119*.

Figure 119.Cable pinouts: Picture Perfect system to intercom system (DB25F to DB25M)

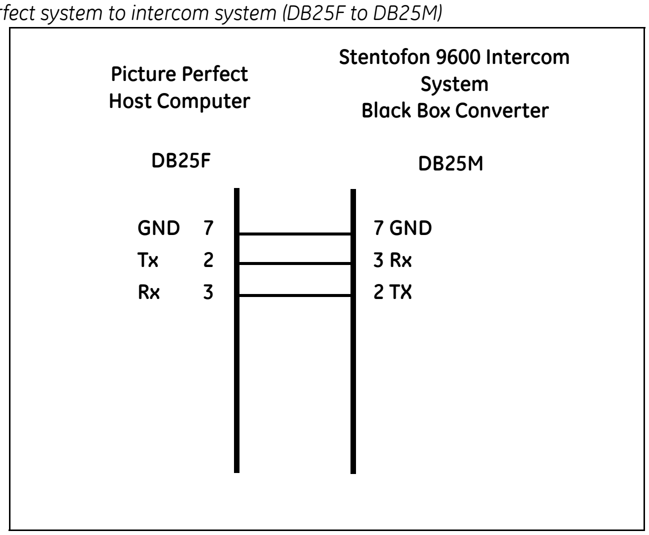
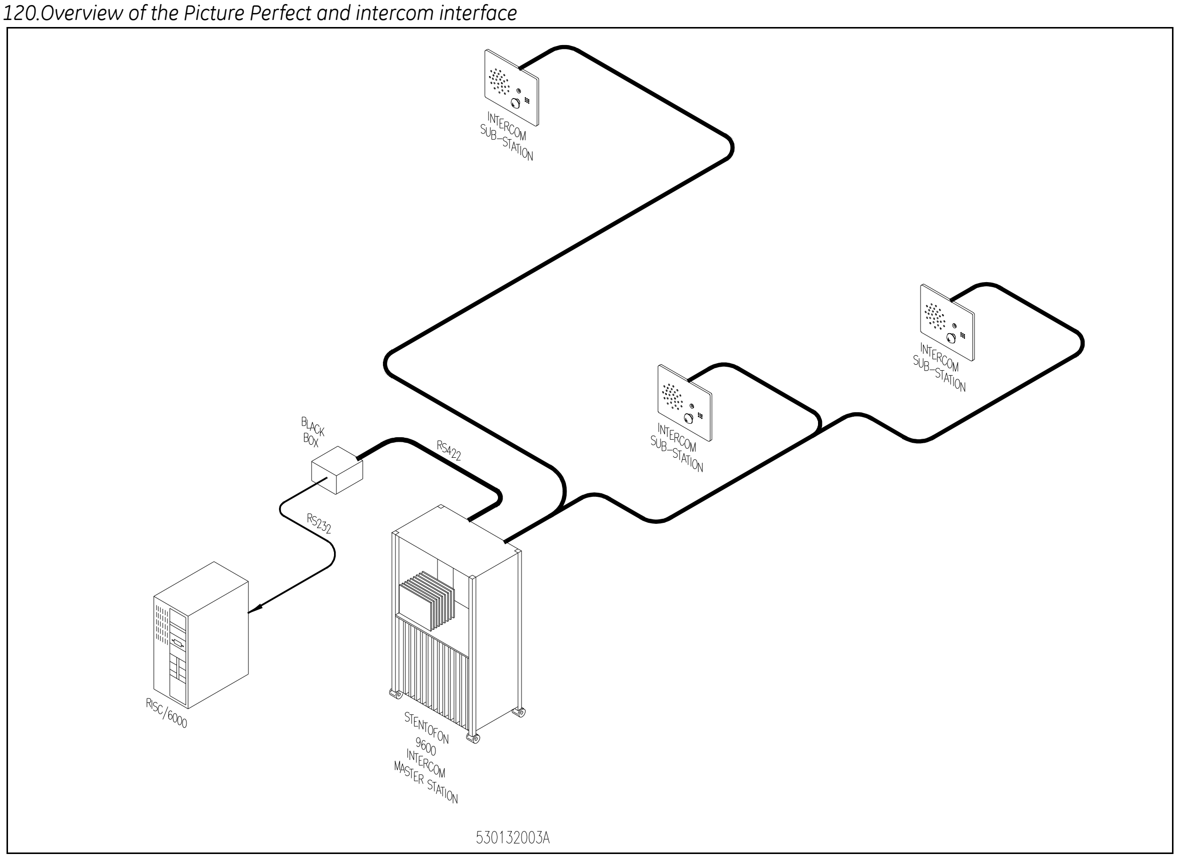


Figure 120.Overview of the Picture Perfect and intercom interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Stentofon Intercom system, provided by the manufacturer, including:
    - Black Box Converter RS-422 to RS-232

Note: Refer to the Stentofon Technical Documentation included with the Security Software Package #64401 for instructions on how to program the Stentofon to forward data to an external system. This configuration must be done prior to installation of the Picture Perfect Stentofon 9600 Interface Software package.

- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

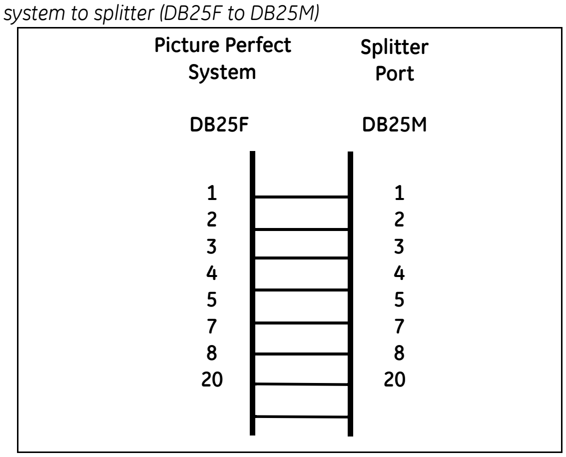
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Stentofon 9600 communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 121*.

Figure 121.Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Cable to connect the splitter master port to the Stentofon Intercom System Black Box Converter. Refer to *Figure 122*.

Figure 122.Cable pinouts: Picture Perfect system to intercom system (DB25M to DB25F)

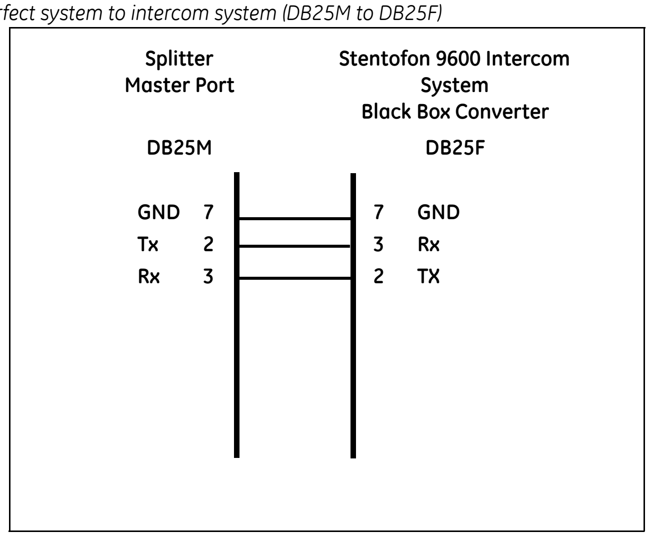
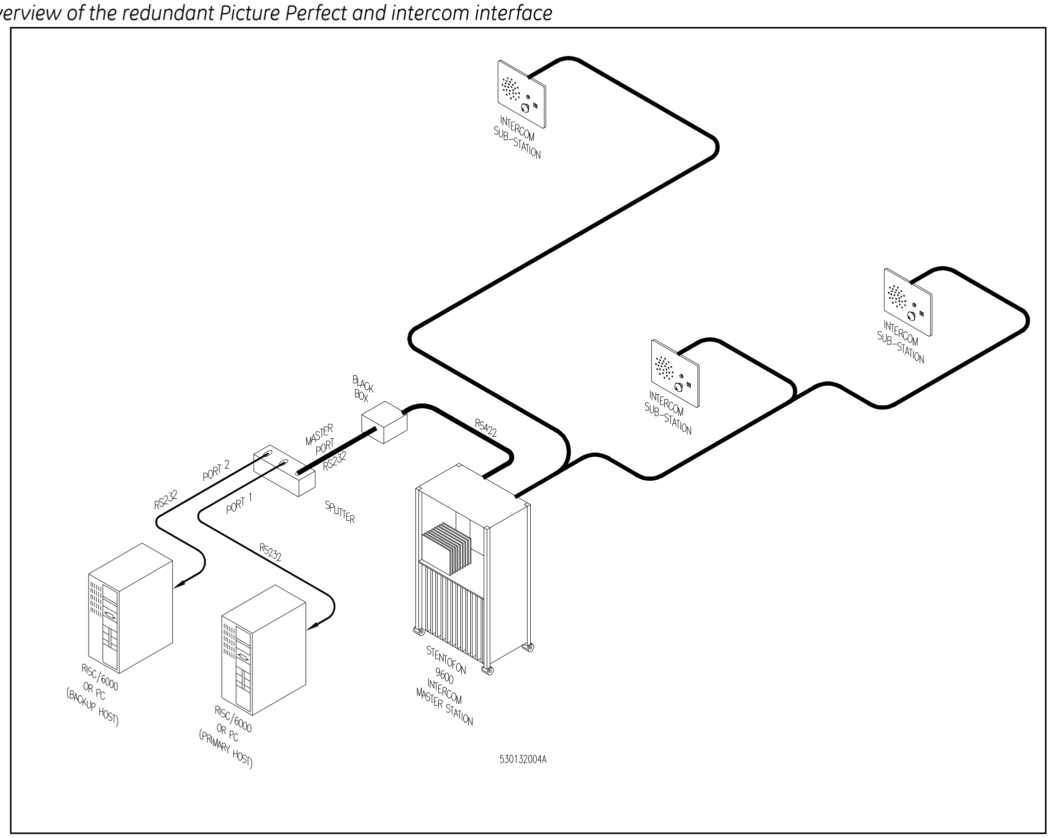


Figure 123.Overview of the redundant Picture Perfect and intercom interface



Configuration

The Stentofon 9600 interface to Picture Perfect acts as a filter by recognizing predefined messages that are received over the serial line. The messages used by the Stentofon 9600 interface were derived from the Stentofon 9600 protocol as described in *Message types* on page 354. These messages must be configured on the Picture Perfect system.

There are two methods available to configure these messages:

1. Automatically using the `stngen9600` data generator tool.
2. Manually using Picture Perfect.

If you plan to enter many messages at once, we strongly recommend you use the `stngen9600` command line tool. Using `stngen9600` exclusively to create or modify data records will enable you to keep track of the specific messages that are being monitored for a particular panel on a specific port. This tool is explained in detail in the following section. However, if you choose to use Picture Perfect to insert the database records, this procedure is explained starting on page .347 with the section entitled *Using Picture Perfect to configure the Stentofon interface*.

Note: Adding outputs and output groups must be done manually using Picture Perfect.

Using stngen9600

The command line data generator tool, `stngen9600`, can be used to install or uninstall database records that are associated with the Stentofon 9600 Intercom System alarm interface. It is part of the Stentofon 9600 alarm interface package for Picture Perfect and is available when that package has been installed.

The Stentofon 9600 Intercom System is capable of producing a large number of messages for all of the pagers and exchanges that may be installed. For Picture Perfect to monitor the numerous message combinations would require a large number of input group and alarm database records to be entered on the system. To add to the complexity, there may be more than one Stentofon 9600 Intercom System interface running on a Picture Perfect system. The `stngen9600` tool will aid in the maintenance aspect when there are multiple Stentofon 9600 Intercom System interfaces installed and running.

When a Stentofon 9600 intercom is added or removed the tool can be used to quickly install or uninstall those database records associated with a particular interface. This is possible by carefully segregating the input group and alarm database records for each Stentofon 9600 interface running on the Picture Perfect system.

The install portion of this tool is explained in the next section. See *stngen9600 – uninstall* on page 345 for an explanation of the uninstall portion.

stngen9600 – install

The install portion of the tool generates input group and alarm database records. Before running the install program, you will need to:

- Create an input file.
- Know the input group prefix.
- Create a list of the paging stations that are going to be monitored. This kind of report can be obtained from the Stentofon 9600 system.

Input file

An input file is required when using the install portion of the `stngen9600` tool. It describes the types of messages and pager locations to be monitored by the Stentofon 9600 alarm interface. The input file is a text editable file that must be created prior to running the tool. The installation portion of the tool will ask you the name of the input file you want to use. The input file will be parsed by the tool and the appropriate input group and alarm records will be created. If the input specifies activation of CCTV devices, the appropriate definition records will be generated and appended to the mapping file specific to each CCTV switcher interface. The CCTV switcher interface tasks can be signalled to access the new information, making CCTV control active with the new information. The format and rules for the file are discussed in the following sections.

To create an input file you will need to know:

- The version of Picture Perfect you are running. This is very important because the layout of the database records may be different depending on the version of Picture Perfect that is running and this tool can generate different output depending on the version.
- The paging locations (pager station ID's) to be monitored.
- For each paging location, whether or not an alarm condition should be generated for the various types of communication activities possible, as discussed later.
- For each paging location and communication activity, whether or not that activity requires CCTV activation, and if so, the CCTV switcher device name and CCTV number. There are eleven CCTV switcher products currently supported as listed below.

The last three bullets comprise the data format part of the input file. With this information, the `stngen9600` tool will generate and load the database with the appropriate input group and alarm database records.

Table 21. Supported CCTV switcher products

Switcher name	Manufacturers product designation
allegiant	Burle Allegiant TC8*x*0*y*
allplex	Burle Allplex TC8928B
amdyn	American Dynamics
grundig	Grundig VAZ300
javelin	Javelin JO326HI
kalatel	Kalatel KTD-312
maxpro	MAXPRO RD-AT100
panasonic	Panasonic PFW Model 500
panasonic550	Panasonic WJ-SX550A
pelco/pelcob	Pelco CM9750
viper	Vicon Viper VPS1330 and VPS1344

Picture Perfect version

The first line of the input file must contain the Picture Perfect version that is running. The version number is used by the `stngen9600` tool to determine the database input. The current versions that are supported by the `stngen9600` tool are:

- 1.7, 2.0, 4.0, and 4.5 (AIX and Linux)

Input file data format

The lines of data that follow the version information should contain rows of delimited text data that define the paging station identifier, the communication activity, and optionally a CCTV device or switcher name and the CCTV alarm number. The delimiter character between fields must be the "|" symbol. There should be one line of data for each unique combination that is going to be monitored.

The format of a data record is as follows:

```
<IntercomStation>|<messagetype>|<AlarmDesc>|<Facility>
[|<CCTVDeviceName>|<CCTVNumber>|<Port>]
```

`<IntercomStation>`

This is the 2 character Intercom station identification number; valid values are 01 through 96, as described in *Message types* on page 354.

`<messagetype>`

Identifies the type of message and is one of Request, Connect, Busy, or Disconnect, corresponding to the Intercom protocol messages as defined in *Message types* on page 354.

`<AlarmDesc>`

This is the unique alarm message text to be displayed on the Picture Perfect **Alarm Monitor** screen and/or logged to the history file. The maximum length of this field is 60 characters.

`<Facility>`

This is the `id` of the facility that will be used for the `input_group` and `alarm` records generated. During the execution of the `stngen9600` program, you will be prompted to select a default Stentofon 9600 facility from the currently defined facilities on the system. If a facility value is not specified in the input file, then the default Stentofon 9600 facility that was selected will be used. To determine the valid `facility id` values , create a SQL report, using as the SQL statement "`SELECT id, description FROM facility`", print the report, and keep it handy when creating the input file.

`<CCTVDeviceName>`, `<CCTVNumber>`, and `<Port>` fields

These fields are optional, but if present, identify a CCTV switcher, which camera is to be controlled when the alarm occurs, and which port the CCTV is connected on.

`<CCTVDeviceName>`

Valid values for the field are defined in column 1 of *Table 21, Supported CCTV switcher products* on page 336.

`<CCTVNumber>`

This is the CCTV alarm number. Refer to the appropriate Picture Perfect CCTV interface document for information on how to specify CCTV information.

`<Port>`

The TTY port on which the CCTV switcher is connected to the Picture Perfect host. When specifying the port, use only the tty portion of the name. For example, if the CCTV switcher is connected on `/dev/tty2`, only specify `tty2`.

Example input file

The following is an example of an input file for a Picture Perfect 4.5 system.

```
4.5
01|Request|Station #01-Request|-1|allegiant|0|tty2
01|Connect|Station #01-Connect|-1|allegiant|1|tty2
01|Busy|Station #01-Busy|-1|allegiant|1|tty2
01|Disconnect|Station #01-Disconnect|-1|allegiant|2|tty2
10|Request|Station #10-Request||allplex|1|tty3
10|Connect|Station #10-Connect||allplex|2|tty3
10|Busy|Station #10-Busy||allplex|1|tty3
10|Disconnect|Station #10-Disconnect||allplex|3|tty3
03|Request|Station #03-Request|-1|allplex|4|tty3
03|Connect|Station #03-Connect|-1|allplex|5|tty3
03|Busy|Station #03-Busy|-1|allplex|5|tty3
03|Disconnect|Station #03-Disconnect|-1|allplex|6|tty3
05|Request|Station #05-Request||kalatel|-1|tty4
05|Connect|Station #05-Connect||kalatel|-2|tty4
05|Busy|Station #05-Busy||kalatel|-2|tty4
05|Disconnect|Station #05-Disconnect||kalatel|-3|tty4
```

An example of the input groups and alarm records that are generated from one line of an input file is shown in the section *Input group and alarm records generated by stngen9600* on page 339.

Input file recommendations

Always keep the input file for future reference on how your system has been set up. It will be extremely useful in understanding what database records have been generated. It will be required information for Customer Support should you need help in configuring the interface.

DO NOT re-use the original input file that has had data added to it without doing an uninstall first. Uninstalls are discussed in later sections. If you have new data for the generator and have not uninstalled using `stngen9600`, then you should uninstall or put it in a separate input file.

Input file error checking

The input file will be checked for error conditions before any data records are generated. If an error occurs within the input file, the `stngen9600` tool will display the error on the screen. The type of error, the column it occurred in, and the line it occurred on in the input file will be given. The input file must be error free before any data records are generated.

Input group prefix

The Stentofon 9600 interface uses the input group prefix to search specific input group records for messages that are to be monitored. This input group prefix was established at installation time of the interface, for every serial line that was configured. The prefix for the Stentofon 9600 interface is stored in the configuration file for

that interface and is read every time it is started. With this in mind it is a requirement to know the input group prefix of the interface for which the `stngen9600` tool is going to generate database records. To determine this you must look in the appropriate `/cas/db/text/stn_ttyN.cfg` file where `ttyN` is the tty name of the port for which the interface is configured. Examine the appropriate file and look for a line that starts with “InpGrpPrefix”. The value following this string is the input group prefix being used by the Stentofon 9600 interface for that port.

Input group prefix usage when installing

When using the install portion of the `stngen9600` tool, the input group prefix is used as the prefix for the description field for all input group records generated. Again, it should be stressed that the input group prefix used by the tool must match the Stentofon 9600 interface that is being targeted.

Input group prefix when uninstalling

The input group prefix is used when using the uninstall portion of the `stngen9600` tool. All input group records that have descriptions that match the input group prefix (the first five characters) will be removed from the database. The Alarm records that each input group points to will be removed with one exception. If the Alarm record is linked to any other input group records outside of the ones to be removed, the tool will not remove any records and will notify the user of this condition. This situation must be corrected by the user before any records can be removed using the tool. The input group user interface can be used to correct this situation by re-assigning the alarm that it is linked to so that it does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records to which other input group records are linked.

Input group and alarm records generated by stngen9600

The input file processed by `stngen9600` produces input group and alarm database records that are inserted into the database when the tool is run. The input group records created are unique for each valid line in the input file. This is done by combining the input group prefix, pager identification number, and communication activity information into the description field of an input group record. If optional CCTV information is specified, a new entry will be created and appended to the mapping table file for the specified CCTV switcher interface program. For example, let’s examine the second line of data in the example input file described earlier and assume an input group prefix of `STN03`.

```
01|Request|Station #01-Request|-1|allegiant|0|tty2
```

This line would generate one input group record with the following Description field:

```
STN01.01.Request
```

One alarm record would be generated with the following Description field:

```
Station #01-Request
```

The input group record would be linked to this alarm.

Since CCTV information has been provided, a new entry will be added to the Kalatel interface program mapping table file to enable control of Kalatel camera 6 for this input group specification. After CCTV switcher mapping table files are updated, signals may be sent to the CCTV switcher interface tasks to force a reload of the mapping files to make CCTV control for the Stentofon active.

There are obviously other important fields to an input group and alarm record that automatically get filled in by the generator. For the input group records, the following fields are set accordingly:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Parent Input Group	should all be <BLANK>
Output Group	should all be <BLANK>
Facility	(Facility id specified for this input group/alarm pair)

The default values for the alarm records are:

Online	Yes
Reset Outputs	Auto Reset Outputs
Alarm Routing	Monitor and History
Priority	50
Facility	(Facility id specified for this input group/alarm pair)

Using stngen9600 – install

Before you start:

- You must have `root` permission to run the `stngen9600` tool.
- The database must be running. The tool will check this when `stngen9600` is invoked. If the database is not running, the tool will attempt to start it up.
- A valid input file must exist that contains the Picture Perfect version and data lines for the message types to be monitored for the described devices.
- You must know the input group prefix used by the Stentofon 9600 interface that is being targeted for data generation. See the section *Input group prefix* on page 338 for more information.

Follow these steps to use the stngen9600 tool to install database records:

1. Log in as a user with system permission.
2. Open a new window.
3. `Type su - root` to become the `root` user.
4. Change to the directory where the input file is located.
5. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `stngen9600` tool and the database tools it uses.
6. Type: `stngen9600` Enter

Messages similar to the following will appear on the screen:

```
Stentofon 9600 Data Generator 2.0
Would you like to (i)nstall or (u)ninstall data records (i/u)? [i]
```

7. To use the install option, type: `i` Enter

   The following messages will display:

```
You have chosen to install database records.
Please enter input file name  :
```

8. Enter the name of your input file.

   The input file you entered will be displayed and you will be asked to confirm it.

```
You entered as the input file name: stn9600.inp
Is this correct (y/n)? [y]
```

9. To confirm the input file name, accept the default `[y]` by pressing Enter. Enter `n` to change the name.

   If you entered `n`, you will be asked to re-enter the name. If you entered `y`, the following messages will display.

```
Enter the input group prefix to be used when creating the records.
It must be "5" to "5" characters with the last character(s) numeric.
For example: STN01
NOTE: This prefix must be the same one that is used by the interface that is being
targeted. Refer to the documentation for more information about input group
prefixes.
Enter the input group prefix:
```

10. Enter the name of your input group prefix.

    The input group prefix you entered will be displayed and you will be asked to confirm it.

```
The input group prefix you entered was: STN01
Is this correct (y/n)? [y]
```

11. To confirm the input group prefix, accept the default `[y]` by pressing Enter. Enter `n` to re-enter the prefix.

If you entered `n`, you will be asked to re-enter the value. If you entered `y`, messages similar to the following will be displayed, regarding the selection of a default facility for the Stentofon 9600 interface:

```
The input group prefix being used is: STN01
**        **
**        Default Stentofon Facility assignment portion**
**                              **
When the input_group and alarm records are created, they will require an associated
facility. You need to select the default facility that will be used when creating
the input_group and alarm records, if an explicit one is not specified.
The currently available (defined) facilities will be displayed, and you will need to
make a selection from the provided list. If you need to create a new facility
specifically for the Stentofon input_groups and alarms, then you should exit this
program, create the facility using the GUI, then re-run this program and then choose
that facility.
Do you wish to exit this program now (y/n)? [n]
```

12. Enter a `y` to exit the script or an `n` to enter a facility from the choices that will be provided.

    If you entered `y`, you will exit the program, and you may create a facility specifically for the Stentofon 9600 interface, if you wish, then re-run the script.
    If you entered `n`, a list of the currently defined facilities on your system will be displayed, and you will need to make a selection. If the number of facilities on your system exceeds 18, you will need to press Enter to continue through the list, until you get to the prompt. When you reach the facility that you choose to use by default with the interface, keep track of the number. This list will be similar to the following:

```
Acquiring facility list from database. Please wait...
The following facilities are defined on your system, and available to be chosen as
the default facility:
==================================================================
          1:   DEFAULT FACILITY
          2:   Building 1
          3:   Building 2
          4:   Building 3
          5:   Building 4
          6:   BUILDING 5
          7:   BLDG 1,2,3,4,5 AND PARKING
          8:   BLDG 2 STUDIO
          9:   BLDG 2 DESIGN AID
          10:  Security Control Center
          11:  Head Office
          12:  Building 1 Garage
          13:  Building 2 Garage
          14:  Building 3 Garage
          15:  Building 4 Garage
          16:  Building 5 Garage
          17:  Head Office Garage
          18:  Penthouse
Press RETURN for more ...
          19:  B-1 COMP ROOMS
          20:  REGENT COURT
          21:  Facility A
          22:  Facility B
          23:  Stentofon 9600 Facility
Enter the value of the default Stentofon facility [1-23] ...: [1]
```

13. Enter the number of the default facility to use with the Stentofon 9600 interface. This value will be used when creating `input_group` and `alarm` records from the entries in the input file, for which a specific facility is not specified.

    The facility you selected will be displayed, and you will be asked to confirm it.

```
You have selected as the default facility:Stentofon 9600 Facility
Is this ok (y/n)? [y]
```

14. Enter a `y` to confirm or an `n` to re-enter the default facility.

    If you entered `n`, you will be asked to re-enter the value.
    If you entered a `y`, the facility you selected will be displayed, and the input data will be checked.

    If there were errors, they will be displayed and you will need to correct those errors and begin the process again.

    If no errors are found, the input group and alarm records will be entered into the Picture Perfect database. You will see messages similar to the following:

```
Default Facility chosen is ............ : [Stentofon 9600 Facility]
**...............................................................**
**       End of Default Stentofon Facility assignment portion ....**
**...............................................................**
Checking input group file data...
Checking alarm file data...
Installing Records...
DBLOAD Load Utility           INFORMIX-SQL Version 9.30.UC4
Copyright (C) Informix Software, Inc., 1984-1997
Software Serial Number AAD#J328673
Table input_group had 12 row(s) loaded into it.
Table alarm had 12 row(s) loaded into it.
statement = UPDATE STATISTICS FOR TABLE input_group
statement processed OK
igd=STN01.01.Request cctvName=allegiant cctv=0
allegiant 1548 518 1548 0 alle_tty2
Creating CCTV device allegiant map addition file
/tmp/stn_allegiant.deltaigd=STN01.01.Connect cctvName=allegiant cctv=1
allegiant 1549 519 1549 1 alle_tty2
igd=STN01.01.Busy cctvName=allegiant cctv=1
allegiant 1550 520 1550 1 alle_tty2
igd=STN01.01.Disconnect cctvName=allplex cctv=1
allplex 1552 522 1552 1 allp_tty3
Creating CCTV device allplex map addition file
/tmp/stn_allplex.deltaigd=STN01.10.Connect cctvName=allplex cctv=2
allplex 1553 523 1553 2 allp_tty3
igd=STN01.10.Busy cctvName=allplex cctv=2
allplex 1554 524 1554 2 allp_tty3
igd=STN01.10.Disconnect cctvName=allplex cctv=3
allplex 1555 525 1555 3 allp_tty3
igd=STN01.03.Request cctvName=allplex cctv=4
allplex 1555 526 1556 4 allp_tty3
igd=STN01.03.Connect cctvName=allplex cctv=5
allplex 1557 527 1557 5 allp_tty3
igd=STN01.03.Busy cctvName=allplex cctv=5
```

```
allplex 1558 528 1558 5 allp_tty3
igd=STN01.03.Disconnect cctvName=allplex cctv=6
allplex 1559 529 1559 6 allp_tty3
igd=STN01.05.Request cctvName=kalatel cctv=-1
kalatel 1560 530 1560 -1 ktd_tty4
igd=STN01.05.Connect cctvName=kalatel cctv=-2
kalatel 1561 531 1561 -2 ktd_tty4
igd=STN01.05.Busy cctvName=kalatel cctv=-2
kalatel 1562 532 1562 -2 ktd_tty4
igd=STN01.05.Disconnect cctvName=kalatel cctv=-3
kalatel 1563 533 1563 -3 ktd_tty4
Generated 4 new entries for CCTV switcher device allegiant map table
Generated 8 new entries for CCTV switcher device allplex map table
Generated 4 new entries for CCTV switcher device kalatel map table
Successfully appended new entries to switcher device allegiant map table!
Successfully appended new entries to switcher device allplex map table!
Successfully appended new entries to switcher device kalatel map table!

Installation complete.
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes(y/n)? [y]
```

15. Enter a `y` to inform the system or an `n` to not inform the system.

    If you entered `n`, the changes just made will not be sent to the interface until the next time it is restarted and you will exit the script.

    If you entered `y`, a message will be sent to the running interface and the new map changes will be re-read and take effect immediately. Messages similar to the following will appear, then you will exit the script.

```
Sending signal USR2 to task alle_tty2...
Sending signal USR2 to task allp_tty3...
Sending signal USR2 to task ktd_tty4...
Sending signal USR2 to task msan...
```

Using stngen9600 to generate new paging station data after an initial installation

If there are new paging stations to be monitored by the Stentofon 9600 interface after an `stngen9600` installation, then one of the following methods should be used when using the `stngen9600` tool. If you are going to be changing paging station data in the input file for existing database records, then use Method 2 below.

Method 1

1. Create a new input file with the new data lines.
2. Invoke `stngen9600` and use the new input file.

Method 2

1. Use `stngen9600` to uninstall all the data records based upon the input group prefix. An uninstall removes all input group records and associated alarm records that have the given input group prefix.

Note: Any input group using the targeted input group prefix to be uninstalled that was created manually through the Picture Perfect Input Group Form will be removed which means it will be permanently lost if its data was not originally part of the input file. Output and output group information is lost whenever the stngen9600 tool is used to uninstall database records.

2. Modify or add the new paging station data to the input file.
3. Invoke `stngen9600` and use the modified input file to re-create the data records.

stngen9600 – uninstall

This portion of `stngen9600` removes the database records associated with a specific Stentofon 9600 interface. **Before running the uninstall program, you will need to know the input group prefix.**

Note: It is a good idea to backup the database before using the uninstall portion of the stngen9600 tool. This can be done through the Control/Backup form. See your Picture Perfect documentation for more details.

Input group prefix

All input group records that have descriptions that match the input group prefix (the first 5 characters) will be removed from the database. The alarm records that each input group points to will be removed as well but with one exception. If the alarm record is associated with any other input group records outside of the ones to be removed, no records will be removed and the user will be notified of this condition. This situation must be corrected by the user before any records can be removed using the `stngen9600` tool. The input group user interface can be used to correct this situation by re-assigning the alarm

that it is linked to so that it does not conflict with alarms that are going to be removed. This is to prevent the accidental removal of alarm records to which other input group records are linked.

Note: Any input group using the targeted input group prefix to be uninstalled that was created manually through the Picture Perfect Input Group Form will be removed. That means it will be permanently lost if its data was not originally part of the input file. It is recommended that any input group/alarm pairs created manually, be added to the stngen9600 input file, so they can be recreated if the uninstall option is used.

Using stngen – uninstall

Before you start:

- You must have root permissions to run the `stngen9600` tool.
- The database must be running. `stngen9600` will check this when the tool is invoked. If the database is not running, the tool will attempt to start it up.
- You must know the input group prefix used by the Stentofon 9600 interface that is being targeted for uninstallation.

Follow these steps to use the stngen9600 tool to uninstall database records:

1. Log in as a user with system permission.
2. Open a new window.
3. Type `su - root` to become the `root` user.
4. Change to the directory where the input file name is located.
5. Type: `. /cas/bin/profile` Enter

   This will ensure you have the correct PATH environment variable that will give you access to the `stngen9600` tool and the database tools it uses.
6. Type: `stngen9600` Enter

   Messages similar to the following will appear on the screen:

   ```
   Stentofon Data Generator 2.0
   Would you like to (i)nstall or (u)ninstall data records(i/u)? [i]
   ```
7. To use the install option, type: `u` Enter

   The following messages will display:

   ```
   You have chosen the UNINSTALL portion of this script. You must enter the input group
   prefix to uninstall the Stentofon database records. This is the first "5" to "5"
   characters used in the description field of the input group records. Entering this
   prefix will result in the removal of the input group and associated alarm records
   from the database.
   If running multiple interfaces make sure you enter the prefix that matches the input
   group prefix used for that particular interface. If properly installed each
   Stentofon interface should have a different input group prefix that is used
   specifically for that interface.
   Do you know the input group prefix and want to continue (y/n)? [y]
   ```
8. To continue, press `y`. To stop, press `n`.

   If you chose to continue, the following message will display.

   ```
   Enter the input group prefix:
   ```
9. Enter the input group prefix.

   The input group prefix you entered will be displayed and you will be asked to confirm it.

   ```
   The input group prefix you entered was: STN01
   Is this correct (y/n)? [y]
   ```
10. To continue, press `y`. To stop, press `n`.

If you chose to continue, the records will be deleted and you will see messages similar to the following:

```
The input group prefix being used is: STN01
Making alarm id checks...
Deleting input group and alarm records...
The following log files contain the SQL statements and errors logged during the
delete process
       /tmp/stn_inpgrp_del.log
       /tmp/stn_alarm_del.log
Successfully deleted entries from switcher device kalatel map file
Un-install completed!
You have made changes to one or more CCTV mapping files.
Do you want to inform the system of these changes (y/n)? [y]
```

11. If this script was called from the removal script, then select `n` to not inform the system now since it's not running. When re-started, the changes will take effect. If the Picture Perfect system is running, select `y` if you want these changes to take effect now, or `n` if you want them to take effect at the next restart.

    If `n` was selected, you will return to the # prompt or back to the removal script.

    If `y` was selected, messages similar to the following will appear then you will exit the script:

```
Sending signal USR2 to task ktd_tty4...
Sending signal USR2 to task msan...
```

Using Picture Perfect to configure the Stentofon interface

For a successful configuration, follow these steps:

1. Adding or modifying input groups for the 3 possible message types for each paging station to be monitored
2. Adding or modifying alarms
3. Adding or modifying output groups and outputs, if desired
4. Monitoring alarms

Adding or modifying input groups

The input group record description is the key to identifying specific Stentofon Touchline Exchange protocol messages. The format of the description is defined such that it can be set up to identify the specific message types coming from the Exchange for each paging station as identified in the Exchange protocol as described in *Message types* on page 354.

The following is the structure of an input group record description:

```
<IGP>.<IntercomStation>.<MessageType>
    <IGP>
```

The 5 character input group prefix described on page .338.

`<IntercomStation>`

This is the 2 character Intercom Station identifier; valid values are 01 through 96 as described in *Message types* on page 354.

`<MessageType>`

Identifies the type of message and is one of Request, Connect, Busy, or Disconnect, corresponding to the Intercom protocol messages as defined in *Message types* on page 354.

There must be a single period between the parts of the input group record description and spaces are not allowed anywhere within the description. This structure must be followed in defining input group records so that the Stentofon 9600 interface software can look for matches in the database using input group descriptions constructed from protocol messages received from the Intercom.

For each intercom station that is to be monitored, you should define an input group record for each message type. An example of the input group record descriptions to monitor intercom station 7 for a Stentofon 9600 interface using input group prefix STN03 is:

```
STN03.01.Request
STN03.01.Connect
STN03.01.Busy
STN03.01.Disconnect
```

See *Figure 124* for an input group record containing a valid input group description.

The procedure for adding or modifying input groups is described below. Note that alarm records must be created prior to input group records as you must specify the alarm when defining the input group record. A description of the procedure for defining alarm records may be found in *Adding or modifying alarms* on page 349.

Note: Input groups and associated alarms that are created manually will be removed if the uninstall portion of the stngen9600 tool is run since it removes records according to the input group prefix.

Adding an input group

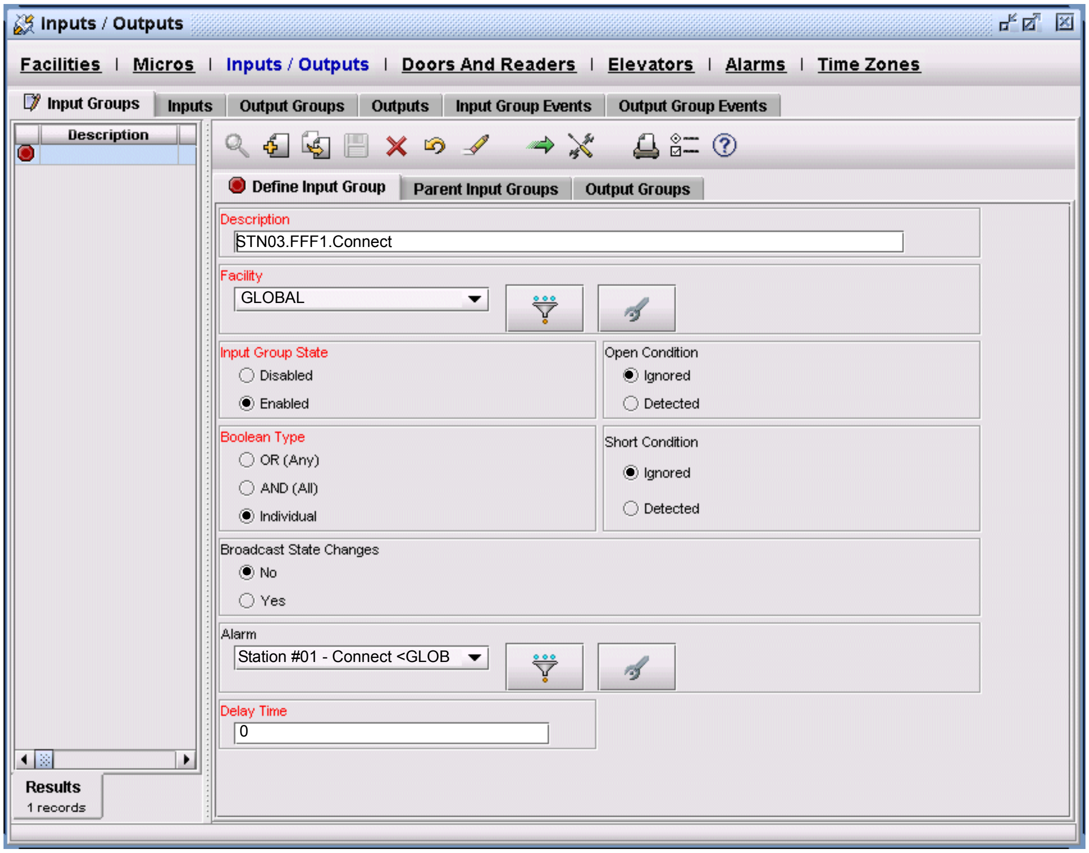
Follow these steps to add an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

   - Delay Time `0`
   - Boolean Type `Individual`
   - Input Group State `Enabled`
   - Open Condition `Ignored`
   - Short Condition `Ignored`
   - Broadcast State Changes `No`
   - Alarm (Should point to the alarm record generated for this input group.)
3. Click **Save**.
4. Click **New** to add another input group.

Figure 124.Sample Input Groups screen



Modifying an input group

Follow these steps to modify an input group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.

   The desired input group should appear.
4. Edit the desired information.
5. When completed, save the input group by clicking **Save**.

Adding or modifying alarms

Each Stentofon 9600 input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded in Alarm History. The linking is done through the Input Group form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the Stentofon interface to operate. It is the combination of the input group description and alarm description that make up the Location and Alarm columns displayed on the Alarm Monitor.

The alarm record description field should be used to further identify or describe the Stentofon 9600 input group to which it will be linked. Several input group records can be linked to the same alarm (for example, one alarm per paging station), but it would be prudent to set up one alarm record for each input group record. The alarm description field has no restrictions (other than a maximum length of 30 characters) or required format since all of the unique information for the intercom's protocol message is located in the input group description. However, each alarm description in the database must be unique.

The recommended format for alarm descriptions is to identify the paging station and the type of action that occurred. For the example input group descriptions given previously, the corresponding alarm descriptions might be as follows:

```
Station 01 - Request
Station 01 - Connect
Station 01 - Busy
Station 01 - Disconnect
```

An example of a valid alarm record is shown in *Figure 125* on page 351. Alternatively, a single alarm could be defined for all three actions as follows:

```
Intercom Station 7
```

The Alarm Routing should be set to the desired routing. If you do not want a particular alarm to be routed to the monitor, printer or history file then you should select None from the Set Alarm Routing picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

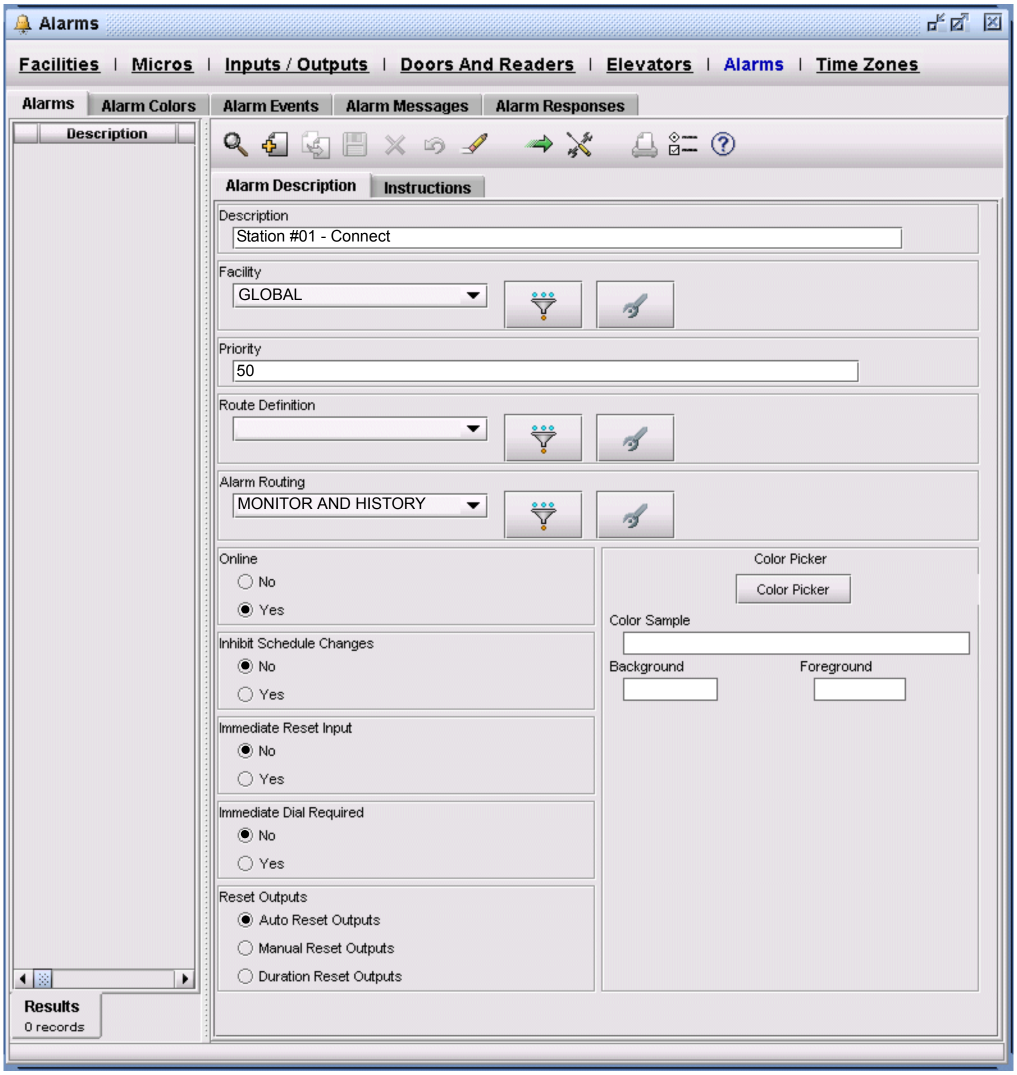
   - Online — `Yes`
   - Immediate Reset Input — `Immediate Reset Input`
   - Reset Outputs — `Auto Reset Outputs`

   Set the priority, alarm routing, facility, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the "MONITOR" for an alarm to show up on the Alarm Monitor and to allow control of CCTV cameras.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 125.Sample Alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, that is, door strikes, lights or sirens, when Stentofon 9600 messages are received, you will need to configure an Output Group and a Output. The output group must be linked to the input group for the message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the *Picture Perfect User Manual*. All fields and options in the Outputs forms may not apply since this is a one way communication between the Stentofon 9600 and Picture Perfect.

Note: Configuring output groups and outputs is optional. If the stngen9600 tool is used to uninstall database records, any outputs and output groups that you defined will be lost.

Monitoring alarms

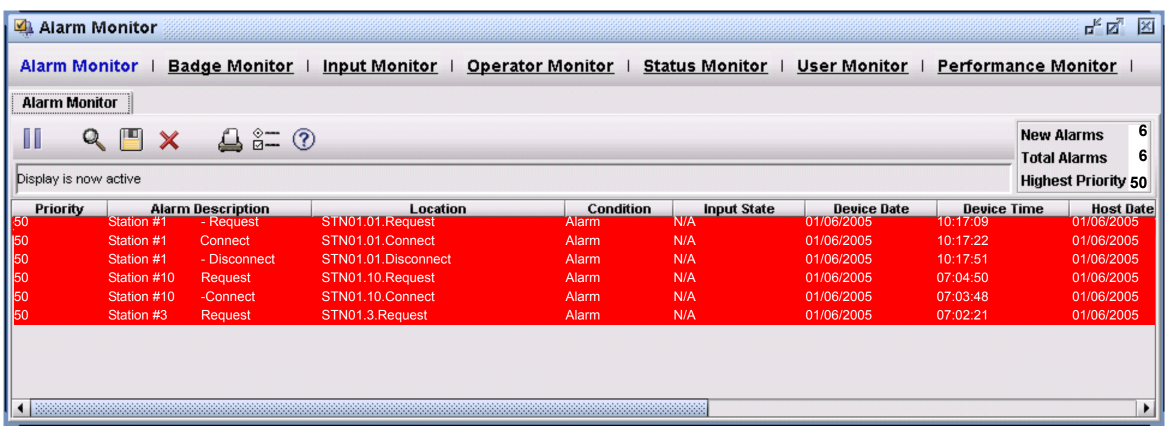
You are now finished with the basic configuration of the Stentofon 9600 interface. The intercom messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the Alarms form for each alarm.

The Alarm Description and Location columns correspond to the Alarm and Input Group record description fields respectively. From this information, the operator should be able to tell the paging station and action from the reported alarm.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the Stentofon 9600 since this is a one way communication.

All messages recognized by the Stentofon 9600 interface will show a condition of Alarm and an input state of N/A. As with other Picture Perfect alarms that come into the Alarm Monitor, the Count column will increment for those alarms that have come in multiple times. To remove Stentofon 9600 alarms from the Alarm Monitor, use the purge button to remove all alarms or click on the alarm to bring up an individual window and remove them individually. The time displayed in the Alarm Monitor is the time that Picture Perfect received the message from the Stentofon 9600 device.

Figure 126.Sample Alarm Monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system that used the input group prefix `STN01` and has appropriate input group and alarm records to recognize the conditions coming from the Stentofon 9600 intercom. Below is an explanation of the information shown by the display.

The Alarm Description column corresponds to the description field of the appropriate alarm record that was created manually or by the `stngen9600` tool. The Location column corresponds to the description field of the appropriate input group record which was created manually or by the `stngen9600` tool.

Lines 1-3

Paging Station 1 completed a communication sequence with the Stentofon 9600. It issued a request for communication, received a connection, and then terminated the connection.

Lines 4-5

Paging Station 10 is in the process of communicating with the Stentofon 9600. It issued a request for communication and received a connection which has not yet terminated.

Line 6

Paging Station 3 has requested communication with the Stentofon 9600 but has not yet been connected.

Testing the Interface

Once the input groups and alarm database records have been set up and the interface is running, it should be tested to make sure messages are being correctly recognized by the interface. The Alarm Monitor should receive the appropriate messages if they have been set up correctly. If the Alarms are not being shown on the Alarm Monitor, then the appropriate input group description should be checked to make sure that it follows the format specified for that message type listed under the *Adding or modifying input groups*section of this document. Make sure the appropriate Input Group prefix is being used in the description field and that it matches the one established upon installation in the `stn9600_ttyN.cfg` configuration file. Also, check the alarm routing field of the corresponding alarm record to make sure that the routing includes Monitor.

If there is a printer hooked up to the Stentofon 9600, then the resulting messages that are being monitored by the interface can be compared against the printed output in terms of the parts of a message that are used to make up an input group or alarm record description field. If there are messages that are not being recognized by the interface that have been set up to do so and they are being printed, then call GE Security Customer Support for further assistance in debugging the problem.

Message types

All message types that will be recognized by the Stentofon 9600 interface software follow a uniform structure. The format will always be a 5 character record preceded by a start of text (`stx=02hex`) character and followed by a carriage return (`CR=0D hex`) character and line feed (`LF=0A hex`) character pair. The following is a representation of this line structure:

```
<STX>'TSXXY'<CR><LF>
```

`<STX>`

This is the start of text character.

`T`

This is the ASCII character transmit from master designator.

`S`

A specific code, defining the type of message line:

- `A` = Call from substation: `Request`
- `B` = Master selected substation: `Connected/Busy`
- `C` = Master released substation: `Disconnect`

`XX`

This represents a substation number (01 - 96).

`Y`

Used to determine if there was a successful connection.

- If `S=A` and `Y=1`, `2`, or `3`: Button Pushed
- If `S=B` and `Y=1`: `Connected`
- If `S=B` and `Y=2`: `Busy`

`<CR><LF>`

This is the carriage return and line feed message line terminator pair.

The types of message lines as defined by the **'S'** field that are accepted and processed by the Stentofon 9600 interface software are described in the following paragraphs.

Message Type A - Request

This message type defines an intercom request to connect to the Stentofon 9600 Intercom System master exchange from a local location.

Message Type B - Connect/Busy

This message type defines a connection of the local substation to the Stentofon 9600 Intercom system. Note that many type `B` messages for a station can occur before the connection is established. However, once the connection is established no further requests will be honored until the intercom station has been disconnected.

Message TypeC - Disconnect

This message type defines disconnection of a pager from the Stentofon 9600 Intercom System.

Extended configuration

The Stentofon 9600 interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/stn9600_ttyN.cfg
/cas/db/text/stentofon9600.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/stn9600_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the Stentofon 9600 device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. Lines beginning with a number sign (#), are comments. The Stentofon 9600 interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a Stentofon 9600 device attached to port `/dev/tty5`:
`/cas/db/text/stn9600_tty5.cfg`

```
#
#                    stn9600_tty5.cfg
#                    Copyright (C) 1995-2003 GE Interlogix, Inc.
#                     All Rights Reserved.
# This file generated from the following installation script.
#
# stentofon9600.inst 1.7 05/14/03
#
# This file contains the configuration information for the STENTOFON
# alarm interface. Each interface that is running on a Picture
# Perfect system must have its own configuration file which contains
# the information on the specific serial line port the interface is
# going to read from. It also contains the unique input group prefix
# that the interface will use to recognize specific input group
# database records using this prefix.
#
# The InpGrpPrefix parameter is a required parameter in the
# configuration file. This parameter is the prefix that must be used
# in the description field for all input groups that are to be
# recognized by the interface. If this parameter is changed here it
# must be changed for all the input groups that are using it as a
# prefix. This prefix is case sensitive so the declaration in here
# must match the one used in the input group description. This
# description must be 5 characters with the last two being numeric. The # input group
prefix declared in here will be read when the interface
# is started. If more than one interface is installed then the input
# group prefix must be unique in each configuration file.
#
# An example prefix would be “STN01” and the next interface that is
# installed could be “STN02”
```

```
# The following values are unique to the STN interface, do not
# change unless instructed by GE Interlogix - CASI
Icanon                  y
#
# The following values are setup based on your installation responses.
#
InpGrpPrefix            STN01


PortName                /dev/tty5
PortBaud                9600
CharacterSize           8
Parity                  n
StopBits                1
Xon                     y
Xoff                    y
```

/cas/db/text/stentofon9600.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the Stentofon 9600 redundant configuration file: `/cas/db/text/stentofon9600.redundant.cfg`

```
#
#            stentofon9600.redundant.cfg 1.5
#            Copyright (C) 1995-2003 GE Interlogix, Inc.
             # All Rights Reserved.
# stentofon.redundant.cfg 1.7 05/14/03
#
# This file contains the configuration information for the STENTOFON
# 9600 INTERCOM interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper           Y
RedundantHosts          primary1,backup1
```

Interface data file backup and restore

The Stentofon 9600 interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 22, Stentofon 9600 Interface Data Files*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Stentofon 9600 software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Stentofon 9600 interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 22. Stentofon 9600 Interface Data Files

Data file name	Description
`/cas/db/text/stn9600_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/stentofon9600.redundant.cfg`	Stentofon 9600 redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.

Appendix O Configuring a Universal Intrusion interface

This appendix provides information on configuring the Universal Intrusion interface to Picture Perfect which acts as a secondary monitoring system for an external device.

In this appendix:

Introduction

The Universal Intrusion interface to Picture Perfect acts as a secondary monitoring system for an external device. It is a general interface for processing alarm and device failure messages that satisfy a defined format and are received over a serial line, from an external device.

The Picture Perfect Alarm Monitor may be used to monitor messages from the intrusion receiver. The information displayed in the Alarm Monitor will show the event type, event date and time, input group prefix, and a user defined description field of message types known to the interface.

Communication from the Universal Intrusion system to the Picture Perfect host is using a serial line connection. The communication is bi-directional. The interface will receive messages, and send ACK/NAK and other special case messages back to the intrusion system.

Messages or alarms recognized by the intrusion interface are looked up in the Picture Perfect database using the input group table. Picture Perfect must be set up with the appropriate input groups and alarms before they can be recognized. Optionally, an output group and associated outputs can be associated with an input group.

Redundant systems

The Universal Intrusion system interface to Picture Perfect supports operations in a Redundant Picture Perfect environment where two hosts have connectivity to a single intrusion receiver. Connectivity is achieved by using a splitter between the Picture Perfect system and the intrusion receiver. This allows the physical connection of the intrusion receiver to an RS-232 serial port on each Picture Perfect host computer.

In a redundant configuration, the intrusion interface software executes on both Picture Perfect hosts and both receive alarm notifications. However, only the interface software executing on the primary host communicates with the intrusion receiver. Whenever an alarm notification is received by the interface software, it determines if it is executing on the primary host. Alarm notifications received by the interface software executing on the redundant host are processed but output to the receiver is suppressed. In the case of a failover, the mode on the redundant host will change to indicate that it is now the primary and the interface software will then conduct communications with the Universal Intrusion receiver.

Software requirements

The software requirements for the Universal Intrusion system and the Picture Perfect system are listed below.

Stand-alone system

If you are using a stand-alone Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect Universal Intrusion interface (`univ_intr`) package

Redundant system

If you are using a redundant Picture Perfect system, the following items are required:

- Picture Perfect base (`base`) package
- Picture Perfect redundant system (`pprs`) package
- Picture Perfect Universal Intrusion interface (`univ_intr`) package

Hardware requirements

The hardware requirements for the Picture Perfect stand-alone and the Picture Perfect redundant system are listed below.

Stand-alone system

If you have a Picture Perfect stand-alone system, the following items are required, in addition to those listed in your Picture Perfect Installation Manual:

- Universal Intrusion system receiver, provided by the manufacturer.
- Serial Ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Universal Intrusion communication program is started.

- Cable to connect the Picture Perfect system to the intrusion system console port. Refer to *Figure 127*.

Figure 127.Cable pinouts: Picture Perfect system to Intrusion Receiver (DB25F to DB25F

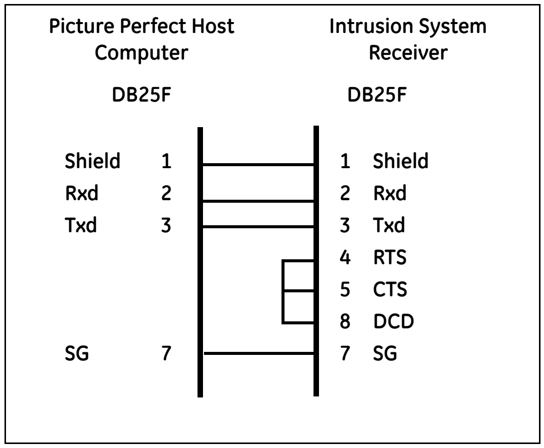
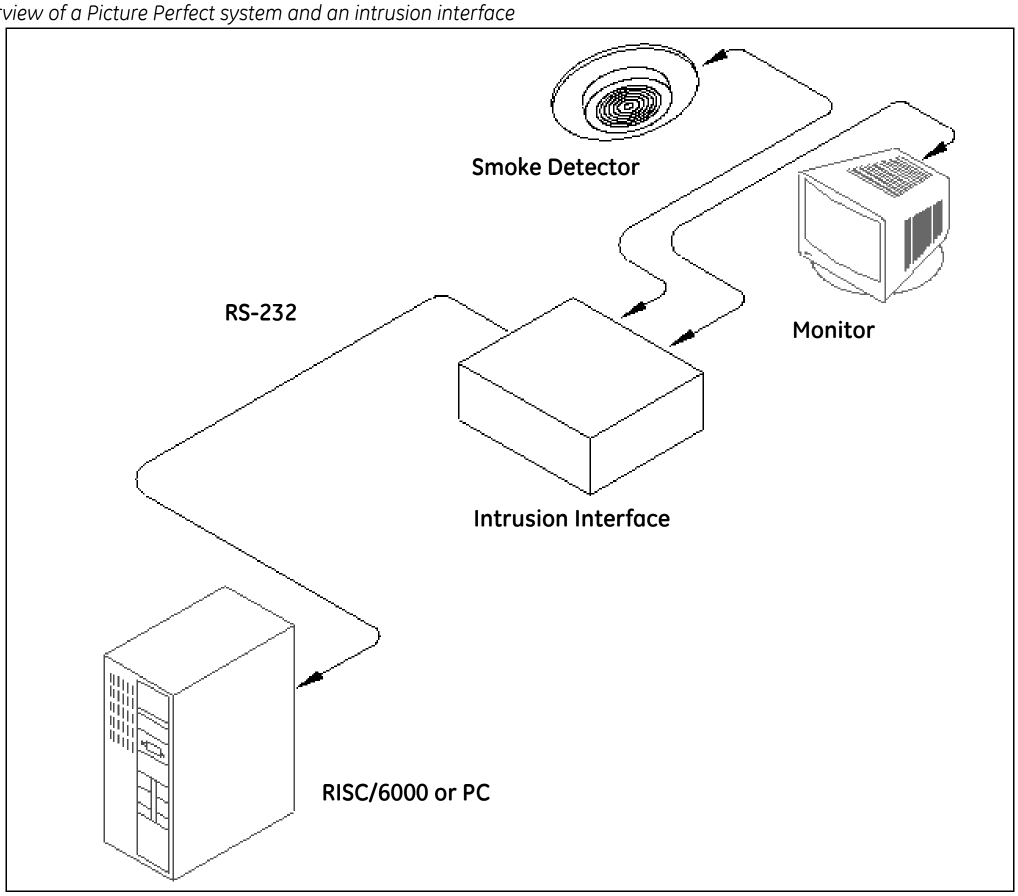


Figure 128.Overview of a Picture Perfect system and an intrusion interface



Redundant system

If you have a Picture Perfect redundant system, the following items are required, in addition to those listed in your *Picture Perfect Redundant Edition User Manual*:

- Universal Intrusion system receiver, provided by the manufacturer.
- Serial ports

AIX

One RS-232-C serial port - any serial port on a multiport asynchronous adapter EIA-232 is acceptable. If any of the COM ports (serial 1 or serial 2) are available, they may also be used. If the system uses an ASCII console, then serial 1 will be reserved for the console. Serial 2 is usually configured for a support modem.

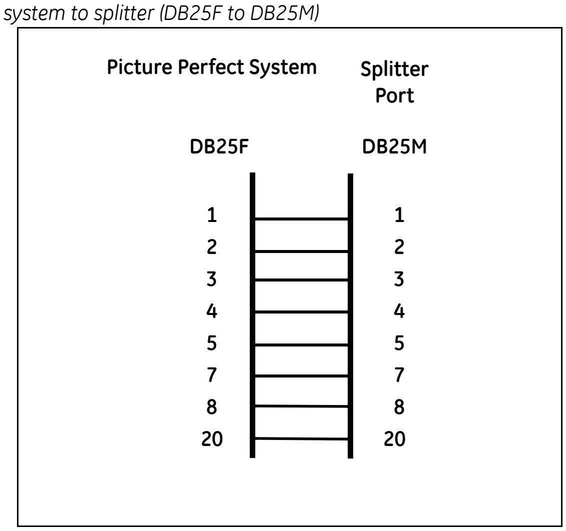
Linux

One RS-232-C serial port - any serial port on a Digi Expander board is acceptable. If any of the COM ports (COM1 or COM2) are available, they may also be used.

This configuration is done automatically when the Universal Intrusion communication program is started.

- A standard splitter box
- Two pass-through cables to connect the Picture Perfect hosts to the standard splitter ports. Refer to *Figure 129*.

Figure 129.Cable pinouts: Picture Perfect system to splitter (DB25F to DB25M)



- Sample of a cable pinout to connect from the splitter master port to the intrusion system's receiver (See figure below).

Figure 130.Sample cable pinouts: Splitter to intrusion system receiver (DB25F to DB25F

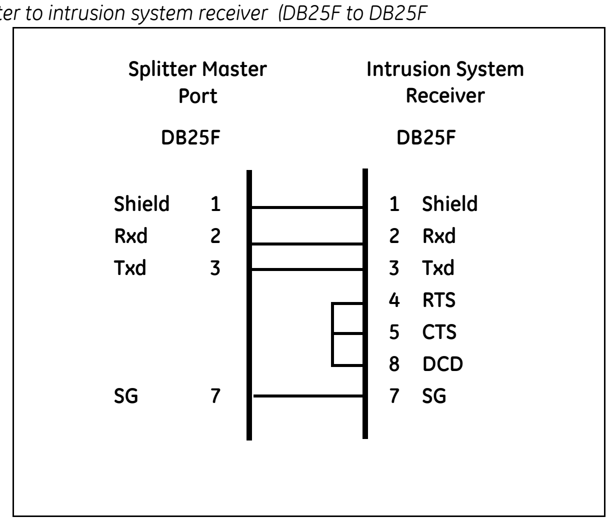


Figure 131.Overview of a cable configuration using a splitter

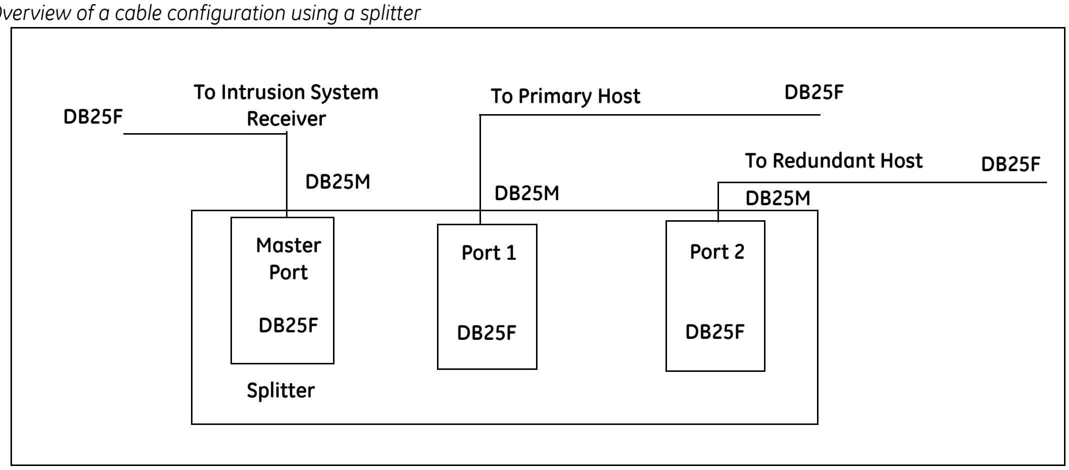
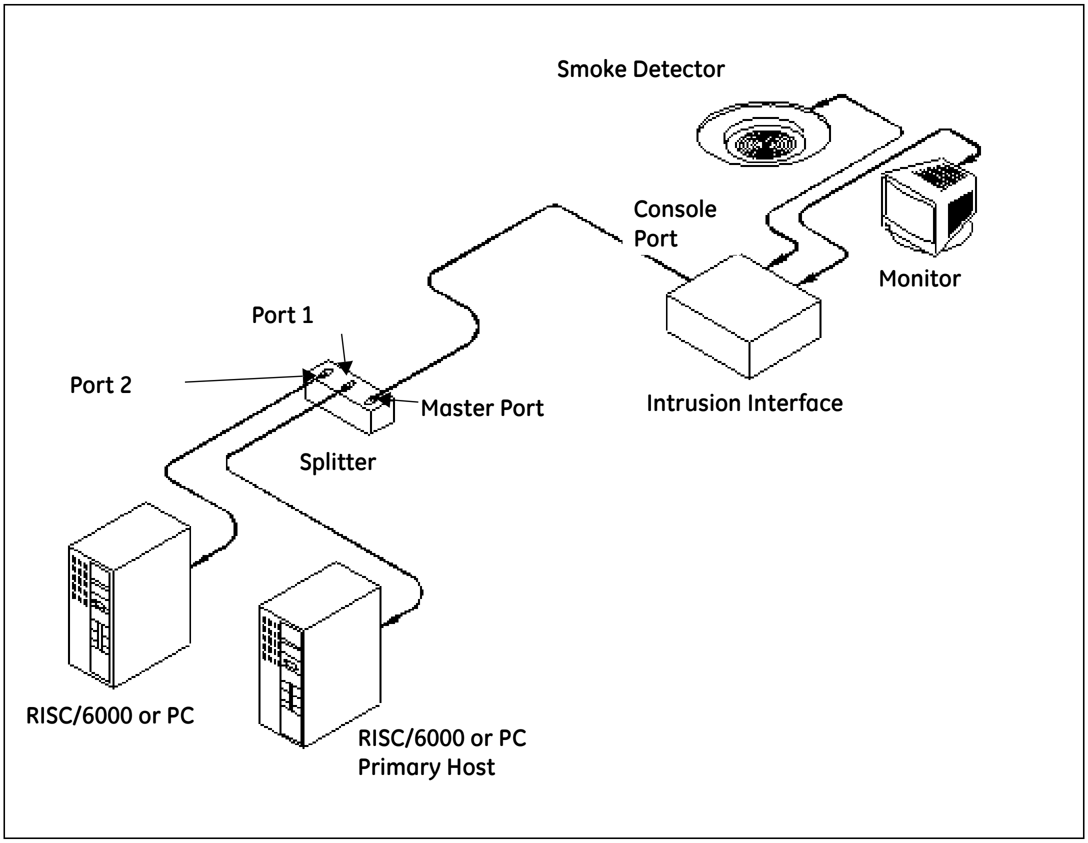


Figure 132.Overview of the redundant Picture Perfect and intrusion interface



Configuration

The Universal Intrusion interface to Picture Perfect acts as a secondary monitoring system for an external device. It is a general interface for processing alarm and device failure messages that satisfy a defined format and are received over a serial line, from an external device.

Alarms recognized by the Universal Intrusion interface

The particular alarms/events that are supported by the Universal Intrusion interface are: `ALARM`, `SYSTEM RESET`, `DEVICE FAIL`, `DEVICE RESET`.

The incoming message, which is a maximum length of 256 characters, is composed of fields that start in specific, configurable columns, and MUST be of the form:

```
Event_Type Event_DateEvent_Time<PrefixEvent_Code>DescriptionEOM
```

Where:

Table 23. Incoming message columns

Field name	Start postition (default pos)	Length	Format	Type or description

Event_Type	1	21	char	`ALARM`
				`SYSTEM RESET`
				`DEVICE FAIL`
				`DEVICE RESET`

Event_Date	23 (this position is configurable)	8	YYYYMMDD	Date Event Occurred.
Event_Time	31 (this position is configurable)	6	HHMMSS	Time Event Occurred (24 hr).
<	37	1	< char	The less than character.
Prefix	38	3-4	[A-Z]...[0-9]	Prefix, e.g. UI01, UI02. Must start with a letter and end with a number. This is used to differentiate messages to different instances of the interface.
Event_Code	After Prefix	Configurable (Default: 7)	[0-9]+	The alarm number sent in by the external device, and used to identify this alarm in the input_group description.
>	37	1	> char	The greater than character.
Description	After Event_Code	0-50	String	Alarm Description. Not used by the interface, but may be used for debugging.
EOM	EndOfMsg	1	0x0A	Hex newline char.

The `Event_Code` is the part of the message that is used to uniquely identify the alarm that comes in. Essentially, it is the `alarm id`, as defined by the external Universal Intrusion panel, and is unique for each `ALARM` or `DEVICE FAIL` alarm that comes in. A `SYSTEM RESET` message is the reset for the matching

ALARM message, and the DEVICE RESET message is the reset for the matching DEVICE FAIL message. The complementary pairs should have the same Event_Code, as that is what will be used to correlate the reset to the initial alarm.

Within the Picture Perfect paradigm, the ALARM and DEVICE FAIL messages generate Picture Perfect alarms, and the SYSTEM RESET and DEVICE RESET messages generate respective alarm resets.

Using Picture Perfect to configure the Universal Intrusion interface

For a successful configuration, follow these steps:

1. Add or modify input groups.
2. Add or modify alarms.
3. Add or modify output groups and outputs, if desired.
4. Monitor alarms.

Adding or modifying input groups

The input group record description field is the key to identifying specific Universal Intrusion panel messages. The format of the input group description is defined such that it can be set up to identify the specific message types coming from the panel for a specific panel.

The Event_Code field, described in the section *Alarms recognized by the Universal Intrusion interface* on page 366, must be entered in the description field of the input group record. A unique Event_Code will be required for each specific ALARM type and DEVICE_FAIL type alarm. This value, in combination with the input group Prefix, discussed in the following section, enables the Universal Intrusion interface to look up in the input group, along with the associated alarm, for the specific alarm, for the panel running that instance of the interface, to determine if the alarm should be sent to Picture Perfect. The combination -Prefix Event_Code- must be the first item in the description field. Other information may follow the input group Prefix and the Event_Code portion of the description, for a maximum of 60 characters. The actual description of the alarm is set up in the Alarm form and tied to each input group.

Input group prefix

The Universal Intrusion interface uses the concept of an input group prefix to more readily identify the input groups that are defined. You must use the following combination of the Prefix and Event_Code in the beginning of each input group record description.

Combine the Prefix with the Event_Code of the messages you wish to recognize. There must be one space between the Prefix and Event_Code. The Event_Code is described in the section, *Alarms recognized by the Universal Intrusion interface* on page 366.

For example:

For an ALARM type message, with Event_Code 01010101, for the Universal Intrusion panel with Prefix UI02, attached to port
/dev/tty02, for a device in Perimeter A, you could enter the Input Group Description as:

```
UI02 01010101 Perimeter A
```

The `UI02 01010101` portion is the required part where `Perimeter A` is the descriptive portion. The alarm that is linked to this input group could be used to further describe the alarm.

Adding an input group

Follow these steps to add an input group:

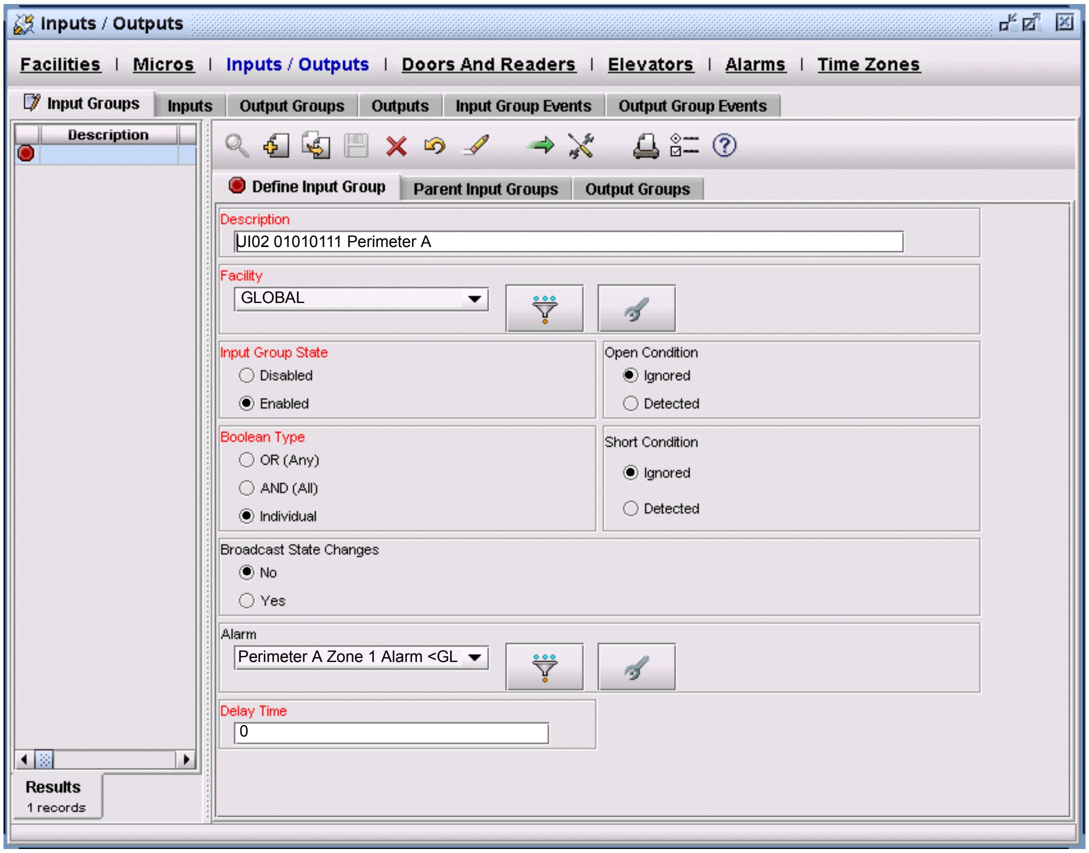
1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Complete the **Input Groups** form for each input group.

   These fields must be set as follows:

Delay Time	0
Boolean Type	Individual
Input Group State	Enabled
Open Condition	Ignored
Short Condition	Ignored
Broadcast State Changes	No
Alarm	(Should point to the alarm record generated for this input group)
Facility	(Facility id specified for this input group)

3. Click **Save**.
4. Click **New** to add another input group.

Figure 133.Sample Input Groups screen



Modifying an input group

Follow these steps to modify an Input Group:

1. Select **Configuration**, **Inputs/Outputs**, then **Input Groups**.
2. Enter the input group description you are looking for as the search criteria.
3. Click **Find**.
4. The desired input group should appear.
5. Edit the desired information.
6. When completed, save the input group by clicking **Save**.

Adding or modifying an alarm

Each Universal Intrusion input group will need to be linked to an alarm record which can be routed to show up on the Alarm Monitor and be recorded by Alarm History. The linking is done through the Input Group form after the alarm record has been established. Creating alarm records that the input group records are linked to is required for the Universal Intrusion interface to operate. It is the combination of the input group description and alarm description that make up the location and alarm columns displayed on the Alarm Monitor.

The alarm record description field should be used to further identify or describe the Universal Intrusion input group it is going to be linked to. Several input group records can be linked to the same alarm but it would be prudent to set up one alarm record for each input group record. The description field has no restrictions or required format since all the unique information for a message type is located in the input group description. If there are similar alarm descriptions that apply to unique devices then separate alarm records and input group records should be created for each unique device to be recognized.

the alarm routing should be set up to according to the desired routing. if you do not want a particular alarm to be routed to the monitor, printer or history file then you should select **none** from the **set alarm routing** picklist.

Follow these steps to add an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. Complete the **Alarms** form.

   These fields should be set as follows:

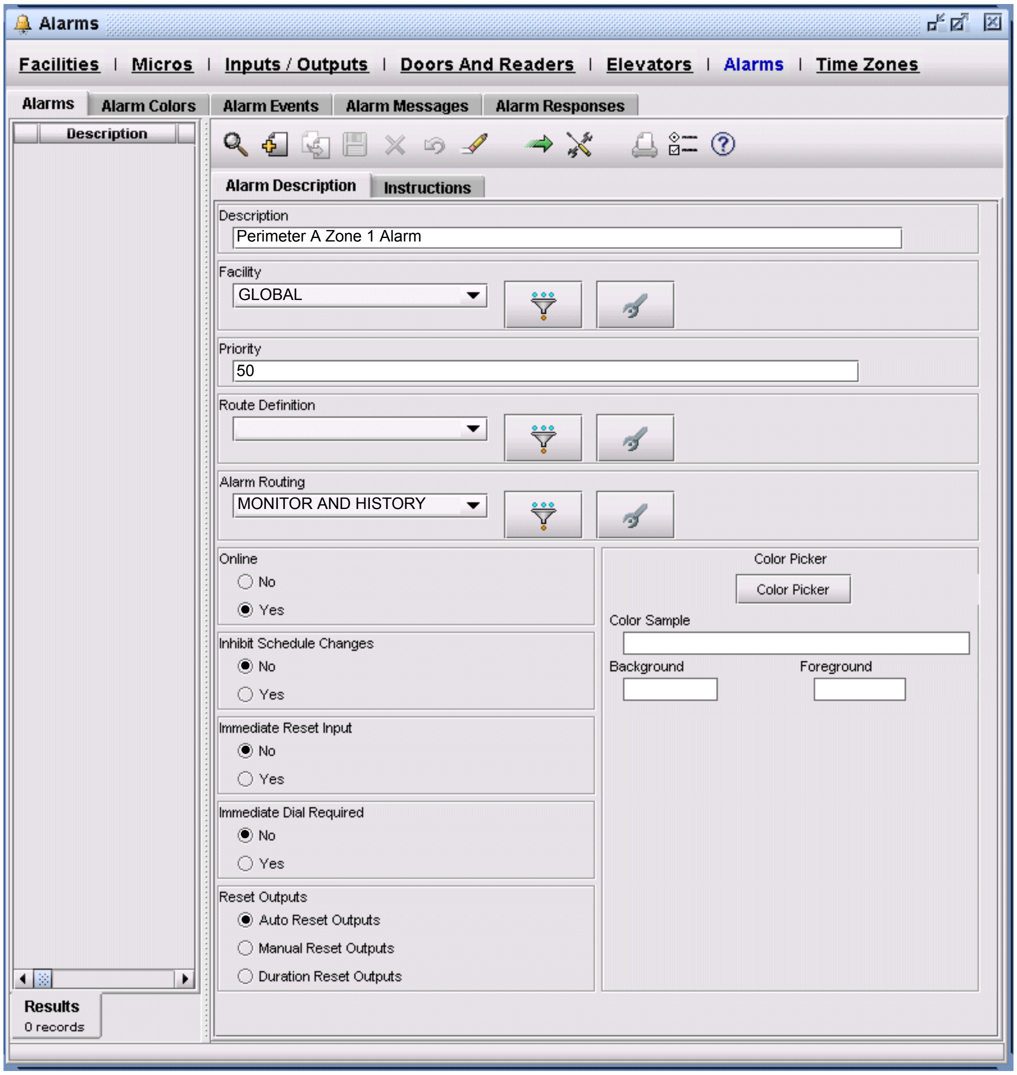
   - **Online** `Yes`
   - **Reset Outputs** `Auto Reset Outputs`

   Set the priority, alarm routing, facility, and instructions as needed.

   Note: The routing must be set to one of the possible selections that includes the “MONITOR” for an alarm to show up on the Alarm Monitor.

3. Click **Save**.
4. Click **New** to add another alarm.

Figure 134.Sample Alarm screen



Follow these steps to modify an alarm description:

1. Select **Configuration**, **Alarms**, then **Alarms** tab.
2. In the **Description** field of the **Alarms** screen, enter the appropriate search criteria.
3. Click **Find**.
4. Edit the desired information.
5. When completed, save the alarm by clicking **Save**.

Adding or modifying output groups and outputs

If you would like to trigger an output, i.e., door strikes, lights or sirens, when Universal Intrusion panel messages are received, you will need to configure an output group and a output. The output group must be linked to the input group for the Universal Intrusion message to trigger an output for that output group. The instructions for setting up outputs and output groups are described in the Picture Perfect manual. All fields and options in the Outputs forms may not apply since this is a one way communication between the Universal Intrusion panel and Picture Perfect.

Note: Configuring output groups and outputs is optional.

Monitoring alarms

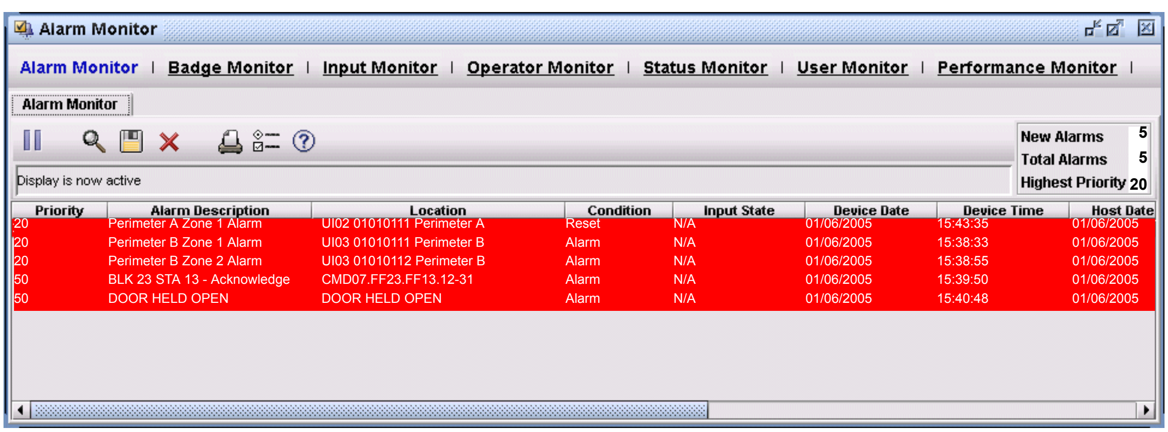
You are now finished with the basic configuration of the Universal Intrusion package. The Universal Intrusion messages that have been recognized through the input groups and linked to an alarm can be monitored through the Picture Perfect Alarm Monitor. For any alarm to be monitored or recorded, the appropriate routing must be selected from the alarms form for each alarm.

The alarm Description and Location columns correspond to the alarm and input group record description fields respectively. From this information, the operator should be able to tell the panel and location of the reported alarm, depending on the descriptive information used in the alarm creation. The complete message of the alarm should be read from the Universal Intrusion panel or from a printer hooked up to that panel.

The operator will be able to respond and remove these alarm conditions from the monitor but no communication will be sent back to the Universal Intrusion panel since this is a one way communication.

All messages recognized by the Universal Intrusion interface will show a condition and input state. As with other Picture Perfect alarms that come into the Alarm Monitor the Count column will increment for those alarms that have come in multiple times.

Figure 135.Sample Alarm Monitor screen



The above figure of the Alarm Monitor shows a possible alarm sequence. This scenario would be for a system with two Universal Intrusion interfaces, that use the input group prefixes `UI02` and `UI03`, and have appropriate input group/alarm records to recognize the conditions coming from the panels. Below is a line by line explanation.

The Alarm Description column corresponds to the description field of the appropriate Alarm record that was created. The Location column corresponds to the description field of the appropriate input group record.

Line 1: A Perimeter A Zone 1 alarm condition was reset at device UI02 01010111.

Line 2: A Perimeter B Zone 1 alarm condition was completed but not yet reset at device UI03 01010111.

Line 3: A Perimeter B Zone 2 alarm condition was received at device UI03 01010112.

Extended configuration

The Universal Intrusion interface supports an extended configuration that allows you to alter its behavior. This configuration information is kept in the following files:

```
/cas/db/text/univ_intr_ttyN.cfg
/cas/db/text/univ_intr.redundant.cfg
```

where `ttyN` is the name of the port specified for the interface.

/cas/db/text/univ_intr_ttyN.cfg

This file contains configuration information specific to the copy of the interface that connects to the Universal Intrusion device attached to the `ttyN` port. It consists of a series of text lines, each containing a variable name followed by a value or setting. Lines beginning with a number sign (#), are comments. The Universal Intrusion interface reads the file upon startup, to configure the port and the interface.

Note: DO NOT change this file unless absolutely necessary. If you find it absolutely necessary to change the file, you must be knowledgeable about text editors, such as vi. Before you begin, please call GE Security Customer Support for assistance.

The following is an example of the contents of the port configuration file for a Universal Intrusion device attached to port `/dev/tty1`:
`/cas/db/text/univ_intr_tty1.cfg`

```
#
#                 univ_intr_tty1.cfg
#
#                 Copyright (C) 2000-2003 GE Interlogix, Inc.
#                  All Rights Reserved.
#
# This file generated by the following installation script.
#
# univ_intr.inst 1.6 02/17/03
#
# This file contains the configuration information for
# the Universal Intrusion Alarm Interface. Each interface
# that is running on a Picture Perfect system must have its
# own configuration file which contains the information on
# the specific serial line port the interface is going to
# read from. It also contains the input group prefix that
# the interface will use to recognize specific input
# group database records using this prefix.
#
# The InpGrpPrefix parameter is a required parameter in
# the configuration file. This parameter is the prefix that
# must be used in the description field for all input
# groups that are to be recognized by the interface. If
# this parameter is changed here it must be changed for all
# the input groups that are using it as a prefix. This prefix
```

```
# is case sensitive so the declaration in here must match
# the one used in the input group description. This
# description must not exceed 4 characters and the
# last character or characters should be numeric. The
# input group prefix declared in here will be read when
# the interface is started. If more than one interface
# is installed then the input group prefix must be unique
# in each configuration file.
#
# An example prefix would be 'UI02' and the next interface that
# is installed could be 'UI02'
#
# All information is divided into two columns,
# 'configuration_item_label', and the desired setting.
# They are as follows:
# PositionDateAlarm:
#             The position of the alarm date in the messages received
#             from the remote system.
#
## PositionTimeAlarm:
#             The position of the alarm time in the messages received
#             from the remote system.
#
# InGrpPrefix:
#             The input group prefix for this interface. It was
#             selected during installation, and should not be changed.
#
# AlarmTimeIsSystemTime:
#             Indicates whether or not we will use the system time
#             for tagging messages that come in from the remote
#             system, or whether the remote system will provide the
#             time of the message.
#
# ExternalSysAlarmNumLgth:
#             Specifies the length of the alarm number that is set
#             from the remote system.
#
# PortName:
#             The name of the port being used by this interface.
#
# PortBaud:
#             The baud rate of the port being used by this interface.
#
# CharacterSize:
#             The size of a character in messages that flow on the
#             port.
#
# Parity:
#             Indicates whether or not parity checking is done on
#             the port.
#
# StopBits:
#             Number of stop bits used on the port.
#
# Xon:
#             Xon port setting.
#             from the remote system.
#
# Xoff:
#             Xoff port setting.
#
# Icanon:
```

```
#            Icanon port setting.
#
# EchoAlarm:
#            Indicates whether or not ALARM type messages received
#            from the remote system are to be echoed back to it.
#
# EchoSystemReset:
#            Indicates whether or not SYSTEM RESET messages received
#            from the remote system are to be echoed back to it.
#
# EchoDeviceFail:
#            Indicates whether or not DEVICE FAIL messages received
#            from the remote system are to be echoed back to it.
#
# EchoDeviceReset:
#            Indicates whether or not DEVICE RESET messages received
#            from the remote system are to be echoed back to it.
#
# PortReInitializationTime:
#            Specifies the time to wait (in minutes), in which, if
#            there are no messages received from the remote system,
#            the port will be reset. A value of 0 indicates that the
#            block read of the port wil never time out, and the port
#            will never be reset.
#
# The following values are unique to the UNIV_INTR interface, do
# not change unless instructed by CASI.
#
#
# These values are setup at installation, and are permanent:
# DO NOT touch these lines.
#
PositionDateAlarm                22
PositionTimeAlarm                30

#
# The following values are setup based on your installation
# responses.
#
InpGrpPrefix                     UI01
AlarmTimeIsSystemTime            1
ExternalSysAlarmNumLgth          7
PortName                         /dev/tty1
PortBaud                         9600
CharacterSize                    7
Parity                           e
StopBits                         1
Xon                              y
Xoff                             y
Icanon                           y

EchoAlarm                        y
EchoSystemReset                  y
EchoDeviceFail                   n
EchoDeviceReset                  n
PortReInitializationTime         30
```

/cas/db/text/univ_intr.redundant.cfg

The presence of this file indicates that it is a redundant installation. The file contains the names of the two redundant hosts, and an indication of whether or not the interface is to run redundantly.

The following is an example of the contents of the Universal Intrusion redundant configuration file: `/cas/db/text/univ_intr.redundant.cfg`

```
#
#                    univ_intr.redundant.cfg 1.5
#                    Copyright (C) 2000-2003 GE Interlogix, Inc.
#                     All Rights Reserved.
# univ_intr.redundant.cfg 1.6 02/17/03
#
# This file contains the configuration information for the Universal
# Intrusion interface for redundant operations.
#
# These values are set up at installation, and are permanent!
# DO NOT touch these lines.
#
RedundantOper       Y
RedundantHosts      primary1,backup1
```

Interface data file backup and restore

The Universal Intrusion interface software requires several data files for its operation. These files are created during the software installation process, and are summarized in *Table 24, Universal Intrusion Interface Data Files*. Backups should be done on a regular basis. A good practice is to do it at the same time the Picture Perfect database is backed up. The Universal Intrusion software installation procedure automatically updates the Picture Perfect backup configuration list file `/cas/db/text/backup.cfg`, so that future backups will include the files required for the Universal Intrusion interface. Refer to the Picture Perfect documentation for information on how to backup and restore files.

Table 24. Universal Intrusion Interface Data Files

Data file name	Description
`/cas/db/text/univ_intr_*.cfg`	TTY port extended configuration definition files (`*` is the port name, for example, `tty1` for AIX, `ttyD001` for Linux).
`/cas/db/text/univ_intr.redundant.cfg`	Universal Intrusion redundant configuration file. Indicates that this is a redundant configuration. Contains the host names.